

Improving the Health and Safety of Temporary Workers

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The current U.S. labor market is reshaping how businesses and workers think about employment, while at the same time remodeling the field of health and occupational safety. Contingent work arrangements have become an increasingly significant part of the economy. For example, day laborers are often hired for construction work via street corners, temporary firms now supply and employ hotel housekeepers, and warehouse workers are hired through staffing agencies. The common theme of this new breed of workers is one of little job security, low wages, minimal opportunities for advancement, and, often, unsafe working conditions.

I. Who are these workers?

According to the Bureau of Labor Statistics (BLS) in 2012, the number of temporary workers has jumped more than 50% since the recession ended four years ago to nearly 2.7 million — the highest number on government records dating to 1990. In no other sector has the growth in hiring come close. Most of these workers are hired by staffing agencies; the American Staffing Association reported that 11.5 million temporary and contract employees are hired by U.S. staffing firms over the course of a year. Overall, temporary workers constitute over two percent of the American labor force (Newberry, 2013). They work in virtually every sector of the economy, including mining, logging, construction, hospitality, retail, manufacturing and others (U.S. Bureau of Labor Statistics, comp. 2013). A relatively small number are in the United States on temporary work visas (Wilson, 2013).

The growth of temporary work reflects the desire for flexibility and cost cutting by businesses. Temporary workers present a potential solution to both issues. Businesses who hire workers on a contingent basis often do not pay directly for workers' compensation and health insurance. They are therefore likely to be protected, at least in part, from insurance premium adjustments based on the cost of workers' injuries. Also, the use of temporary workers gives firms a workforce that need not be provided with medical and pension benefits. According to the Bureau of Labor Statistics (Contingent and Alternative Employment Arrangements, February 2005), contingent workers continued to be much less likely to have employer-provided health insurance. Less than one-fifth of contingent workers (18 percent) were covered by health insurance provided by their employer, compared with slightly more than half of noncontingent workers (52 percent). Contingent workers also were much less likely to be eligible for employer-provided pension plans - about 1 in every 5 contingent workers was eligible. Some businesses have even begun to hire temporary workers almost exclusively (Chicago Trib., 2013).

The Bureau of Labor Statistics defines contingent work as “any job in which an individual has no explicit or implicit contract for long-term employment.” Included in this term are four categories of workers: independent contractors, workers whose services are provided through contract companies, workers paid by temporary help agencies, and on-call workers. According to the most recent U.S. Census Bureau survey, about 30 percent of the U.S. workforce could be classified as contingent workers. This statistic represents approximately 13 percent part time workers, 7 percent independent contractors, 5 percent self-employed workers, and 5 percent a combination of agency temps, direct-hire temps, on-call, and contract company workers (U.S. Government Accountability Office, 2006).

Demographics: Contingent workers are, on the whole, slightly younger, more likely to be female, less likely to be white non-Hispanic, and less likely to have a high school diploma or equivalent than other workers. Additionally, according to the U.S. Census Bureau supplemental data on contingent work (February, 2005):

- 5.7 million workers were classified as contingent.
- The demographic characteristics of workers in alternative employment arrangements varied widely between the four arrangements. For example, independent contractors were more likely than workers in traditional arrangements to be older, male, and white. Temporary help agency workers were more likely to be young, female, and black or Hispanic or Latino.
- More than half of contingent workers (55 percent) would have preferred a permanent job.
- Only 32 percent of temporary help agency workers preferred their current arrangement.
- Compared with non-contingent workers, contingent workers were more likely to have less than a high school diploma and less likely to hold at least a bachelor's degree.

Sector of Employment: Compared with non-contingent workers, contingent workers were more likely to hold jobs in the professional and business services, education and health services, and construction industries. Looking at the data for temporary help agency workers, most were more likely than traditional workers to hold office and administrative support and production, transportation, and material moving jobs. In manufacturing, 28% of workers overall are employed and hired through temporary help agencies. Workers provided by contract firms in construction and manufacturing accounted for over 16% and 14% respectively (Bureau of Labor Statistics data on Contingent and Alternative Employment Arrangements, February 2005).

Income: Temporary workers tend to earn less than their permanent counterparts: blue collar workers in production and transportation and material moving occupations tended to earn 20–30 percent less if they were temporary. Those in office and administrative positions also tended to have lower wages than their permanent counterparts. For some highly skilled professions such as nursing the wage differential was smaller (10 percent). Full-time contingent wage and salary workers had median weekly earnings of \$488 in February 2005 (U.S. Census Bureau supplemental data on contingent work, 2005).

II. Vulnerability of Temporary Workers to Workplace Injury and Illness

Clearly, temporary workers constitute a group at high risk for injury and accident. Apart from training shortcomings, these workers are also more likely to suffer from high levels of workplace stress, depression, sleep deprivation, all conditions associated with higher levels of accidental injuries. Temporary workers are more likely to be involved in less secure jobs and experience lower worklife quality, both of which can have a significant impact on the worker's mental health. (Wagenaar et al., 2012). They are at elevated risk for absence from work due to psychological problems (Audhoe et al., 2012). Kompier, Ybema, Janssen and Taris, note that the work of temporary and permanent employees tends to differ with respect to working conditions and the nature of the jobs: typically permanent employees had better jobs measured in terms of employment contract, work life quality, and job security. They also found that there were substantial effects in health behaviors (smoking) and that psychological health was worse among temporary agency workers. Over time, positive change in employment contract was associated with a better quality of working life and better psychological health, whereas the opposite was true for negative changes (Kompier et al., 2009). This suggests a significant difference between temporary and permanent workers with regards to psychological health, resulting in an impairment for the former group of productivity, effectiveness and efficiency at work. The frequency of self-reported "job strain" was almost double in temporary workers (Roquelaure et al., 2002). Job strain is known to be associated with job demands and limited job decision latitude (Karasek, 2013). This suggests that temporary work is more likely to be associated with increased mental stress, anxiety and trauma.

There are several consequences of impaired mental health for temporary workers. It is associated with reduced performance levels, higher absenteeism and staff turnover and, most critically, workplace accidents (European Agency for Safety and Health, 2011). Cameron, Purdie and McClure argue that mental ill health is a

risk factor for accidents due to its association with poor concentration, inability to assimilate training, and failure to wear protective equipment (Cameron et al., 2006). According to Hilton and Whiteford, mental health symptoms are known to impair attention, concentration, motivation, decision making, visual control memory, information processing, and psychomotor reaction times (Hilton & Whiteford, 2009). This has an overall impact not only on job performance but also on the likelihood of workplace accidents. In addition, impaired mental health is associated with increased substance abuse which is also associated with workplace accidents (Hinkka et al., 2013). Workplace stress has even been associated with criminal behavior (Brimhall, 2013). In addition to all of these factors, temporary workers are often hired at times of increased demand, leading to increased need for speed, long hours, and production pressure, all known contributors to accidents (Harrell, 1990; Wright & Lund, 1998).

III. Rates of Injury and Illness among Temporary Workers

There is evidence that contingent employees, including members of the contract and temporary workforce, are at greater risk than permanent employees for work-related injuries. A study examining employees from all 15 member states of the European Union demonstrated that fatigue, backache, and muscular pains were reported by more full-time European Union temporary workers than permanent (Benavides et al., 2000). In particular, due to the repetitive nature of certain industrial jobs involving machine operation, temporary workers have been found to be more at risk for musculoskeletal disorders especially in the wrist and hand, exacerbated by the utilization of vibrating hand tools (Roquelaure et al., 2012). In Spain, researchers found more reports of traumatic occupational injuries among temporary workers in comparison to permanent workers, almost three times greater for non-fatal injuries and two and half times greater for fatal occupational injuries (Benavides et al., 2006). The job sectors especially noted were occupations involving crafting and machine operation or assembly in plants.

The most recent Census of Fatal Occupational Injuries, compiled in 2011, defines a contractor as “a worker employed by one firm (or who is self-employed), but working at the behest of another firm that exercises overall responsibility for the operations at the site where the decedent was killed.”

Relevant Census findings include:

- Fatal work injuries involving contractors accounted for 542 of the 4,693 fatal work injuries reported in 2011 (12 percent). Texas (56), Florida (51), and California (42) recorded the highest number of fatal occupational injuries among contractors.
- The group was composed of 527 men and 17 women.
- Hispanic or Latino contractors accounted for 28 percent of the fatal work injuries among contractors.
- Nearly 1 in 4 fatal work injuries involving contractors occurred under the auspices of a government entity, including 50 fatal injuries in state, 47 in local, and 11 in federal contractors.
- Private construction contractors accounted for 21 percent of contractor fatalities.
- Falls accounted for the highest number of fatal work injuries involving contractors (approximately 30%).
- 94 out of 542 (17%) of deaths were caused by exposure to harmful substances or environments.

Employment relationships have changed, but the laws that exist to protect workers have failed to keep pace with these changes. Subcontracting and temporary staffing create an underclass of workers that are not sufficiently protected by current law and regulations. As the contingent worker population continues to grow, occupational safety and health issues must be the forefront of the conversation.

IV. Workplace Training for Temporary Workers

Contingent workers are more susceptible to workplace illness and injury for a variety of reasons. Temporary workers engage in occupations with high levels of risk such as production/manufacturing and construction. In addition, temporary workers may get less safety training and protective gear, often because

staffing agencies and user-employers are unclear about which entity is responsible for providing them (Cummings, 2008).

The Occupational Safety and Health Administration (OSHA) places great emphasis on training and information as a way to maximize worker health and safety. Over 100 OSHA regulations require some form of training. One standard -- Hazard Communication -- deals exclusively with the issue of classifying chemical hazards and ensuring that employers and employees are informed of these hazards (Hazard Communications, 2013). Currently in the process of implementing a revised standard, OSHA has estimated that the new standard will prevent hundreds of injuries and fatalities estimated at \$250 million per year (OSHA, 2013b). Thus, OSHA clearly attributes a significant burden of occupational injury and disease to insufficient training and information sharing. OSHA's new initiative focusing on temporary workers points to the role of inadequate training in injuries among these workers (OSHA, 2013c).

The importance of training is underlined by longstanding significantly higher injury rates in newer workers, which suggests that lack of familiarity with the job site and its potential dangers plays a role in many workplace accidents (Morassaei, 2013; Siskind, 1982). For temporary workers who, owing to the nature of temporary work, are frequently on a job for less than six months, the risks inherent in lack of familiarity are magnified, perhaps accounting in part for the disproportionate number of workplace injuries involving them (Patussi et al., 2008; Smith et al., 2010). It is clear that lack of sufficient training and, in some cases, safety equipment, caused at least some of these injuries (Benavides et al., 2006; Sarmiento-Salinas et al., 2004; Mehta et al., 2003; Rebitzer, 1995; Wong, 1994). This lack is compounded by the fact that studies have shown that temporary workers are often given more dangerous jobs, those for which an employer might not wish to risk the permanent workforce, and are more likely to be used in more dangerous workplaces (Amuedo-Dorantes, 2002). It is further compounded by the lack of collective representation for these workers, as nonunion work is also associated with poorer safety training (Kochan et al., 1992).

Those who have limited English speaking skills and perform the most dangerous tasks have been shown to be most at risk for serious or fatal injuries, as comprehension of safety precautions is critical to protect health and safety on the job. A language barrier between temporary workers and their employers may especially hinder the quality of training received by temporary workers. As previously mentioned, out of the 12 percent of injured workers that had fatal injuries in 2011, 28 percent were Hispanic or Latino (U.S. Bureau of Labor Statistics, U.S. Department of Labor - Injuries, Illnesses, and Fatalities (IIF) Program Data, 2013). This additional obstacle, combined with lack of proper and thorough training by their employers can render these workers even more vulnerable to work-related injuries and fatalities.

As discussed in connection with the Hazard Communication Standard one significant area of concern for OSHA has been training and information relating to chemicals in the workplace. A study of workers in Washington State found that temporary workers had higher rates of injury from toxic exposures than permanent workers. In some sectors, temporary (agency-employed) workers had injuries due to toxics that were almost 400 percent higher (Smith et al., 2010). A number of reports in the literature discuss cases of temporary workers who have suffered serious injury and death due to exposure to hazardous chemicals in the workplace without sufficient training. (Fischer et al., 1998; Mbaye et al., 2003; Mbaye et al., 1999). A study involving the petrochemical industry in the United States, which was driven by an increase in reports of contract worker injuries, showed that compared to non-contract workers, temporary workers received fewer hours of safety training, which is consistent with the idea of reducing perceived costs and time by hiring these types of workers (Kochan et al., 1994).

Training can be both costly and time consuming. It has been suggested that employers lack the incentive to train workers with whom they will have only a short term relationship (Waehrer et al., 2007). In addition, where workers' compensation premiums are paid by the agency rather than the host employer, the financial incentive to create a safer workplace is attenuated (Waehrer et al., 2007). Finally, the cost and time of training may appear more significant in the context of a worker who may spend only a few days on the job.

V. Case Study: the Chemical Industry

A recent executive order directs OSHA and other federal agencies to work together to ensure safety in the chemical industry (Executive Order 13650, 2013). One critical focal point for such concerns is the extent to which workers in the industry are well trained to deal with the demands of workplaces that present extreme hazards to the workers themselves as well as to surrounding communities. Explosions at NDK Crystal Manufacturing in 2009 (U.S. Chemical Safety Board 2013), Texas City in 2005 (U.S. Chemical Safety Board 2007), West Pharmaceutical Services in 2003 (U.S. Chemical Safety Board 2003), and others resulted not only in harm to workers and worksites but also in injury and destruction beyond corporate borders.

The chemical manufacturing sector and other related sectors are of particular concern with regard to temporary workers because of the omnipresence of chemicals that are often toxic, volatile, or both. Data related to these industries reflect this inherent danger. According to an OSHA document detailing the number of fatalities in 2012 by industry, there were 22 fatal incidents in chemical manufacturing. Six of these were due to transportation incidents, six were due to fires and explosions, three were due to falls, slips, and trips, and three were due to contact with objects and equipment. The remaining four were not characterized. Eight of these fatalities were found in basic chemical manufacturing industries, while six were found in fertilizer manufacturing, half of them due to fires and explosions (U.S. Bureau of Labor Statistics, 2013e). While these numbers may seem small compared to the fatalities within the construction industries (construction of buildings had 133 fatalities in 2012), they are consistent with other manufacturing industries, which generally have between 10 and 30 fatalities (U.S. Bureau of Labor Statistics, 2013e).

With regard to non-fatal illnesses, the incidence of total cases for chemical manufacturing is 22.2 per 10,000 full time workers, which breaks down into 5.5 skin diseases/disorders, 1.9 respiratory conditions, 4.0 hearing loss, and 10.8 all other illnesses. The total incidence rate for basic chemical manufacturing is 17.0 per 10,000 full time workers, 16.7 for other basic inorganic chemistry manufacturing, and 28.7 for other basic organic chemical manufacturing. The highest total incidence rate within the chemical manufacturing category is 38.9 for fertilizer (mixing only) manufacturing. By comparison, the construction industries have a total incidence rate of 8.1, which falls largely into the "other illnesses" category (U.S. Bureau of Labor Statistics, 2013a). In terms of sheer numbers of cases of work related illnesses in 2012, chemical manufacturing had roughly 1,800 cases, compared with 4,100 cases in construction, but had significantly more cases than most other types of manufacturing. The major exceptions were in pharmaceutical and medicinal manufacturing, as well as medicinal and botanical manufacturing, which both had around 700 cases. Taken together, this suggests that there are fewer people falling ill in chemical manufacturing than in construction, but since there are more people working in construction, the cases of illness that occur in chemical manufacturing have a greater effect on incidence rates than in construction (U.S. Bureau of Labor Statistics, 2013c).

For both nonfatal illnesses and injuries for 2012, the total incidence rate for chemical manufacturing was 2.3 per 100 full-time workers, with 0.7 resulting in days away from work, and 0.7 resulting in job transfer or restriction. Most of the more specific chemical manufacturing industries had total incidence rates between 2 and 4 per 100, the major exception being gum and wood chemical manufacturing, with a notably high rate of 7 per 100. Including injuries as well as illnesses, construction had a total incidence rate of 3.7, with 1.4 resulting in days away from work, and 0.6 resulting in job transfer or restriction (U.S. Bureau of Labor Statistics, 2013b). The incidence rate for chemical manufacturing represented approximately 18,600 cases in 2012. As with the illnesses separately, the pharmaceutical and medicinal manufacturing industries warrant separate mention with roughly 5,600 cases. Pharmaceutical preparation manufacturing also requires mention, with approximately 4,100 cases. These case numbers again pale in comparison with the number associated with construction, which was roughly 183,200 cases (U.S. Bureau of Labor Statistics, 2013d).

A critical fact regarding the ability of temporary workers to work in these dangerous workplaces is that their employers must abide by the OSHA Hazard Communication standard (Hazard Communications, 2013), which states that hazardous chemicals must be properly labeled, and that information on how to read such labels and handle such chemicals be conveyed intelligibly to employees (OSHA, 2013d). For the period between

October 2012 and September 2013, chemical manufacturing industries as a whole were responsible for 110 citations for violating this standard in 63 inspections, with penalties totaling \$78,415, the 17th most citations of any industry that year (OSHA, 2013e). Within the chemical manufacturing sector, other chemical product and preparation manufacturing had the most citations for violating this standard with 28 citations over 15 inspections garnering \$28,673 in penalties (OSHA, 2013f). All other chemical product and preparation manufacturing had 15 citations for violations of this standard from 11 inspections, with a total penalty of \$16,278 (OSHA,2013g). Although these numbers appear small, they represent a serious problem, one of which temporary workers may bear an unfairly large share for want of training and experience. **Significantly, although construction injuries are more numerous, chemical accidents have a far greater potential for harm caused by improper handling of toxic and volatile substances. For example, one component cause of the 2005 Texas City refinery explosion was apparently poor safety training (U.S. Chemical Safety Board 2007).** The vast majority of workers injured and all of those killed in that explosion were contract workers.

IV. Solutions to the Problems of Temporary Workers

A. United States

On the federal level, all of the laws that protect permanent workers apply equally to temporary workers. However, OSHA has identified temporary workers as potentially more vulnerable to workplace injury. As a result, it has created a new initiative to protect these workers by directing OSHA inspectors to take particular note of temporary employees who may be present in workplaces under inspection (OSHA 2013a). In addition, the OSHA Process Management of Highly Hazardous Chemicals Standard requires that all employees be properly trained and annually refreshed in correct processes and operating procedures that are within their job responsibilities (Process Safety Management, 2013). In a 2010 memorandum, OSHA highlighted the importance of training comprehension of

Policy Items	Illinois	Massachusetts	New Mexico	Rhode Island	Texas	Georgia	Arizona	Florida	TOTAL
Must Inform if Placed in Site with Hazardous Chemicals						X			1
Hazardous Chemical Consent Form						X			1
Employment Notice	X	X		X					3
Confirmation of an Attempt to Seek work (if work unavailable)	X								1
Recordkeeping (Info about each Worker)	X		X		X				3
Charge Restrictions	X	X	X		X	X	X	X	7
Transportation Restrictions	X	X				X		X	4
Wage and Payment Notice	X	X	X			X	X	X	6
Public Access Area (Waiting Room) Required	X				X			X	3
Agency Not Allowed to Restrict Permanent Job Acceptance	X		X				X		3
Able to Charge Third Party Placement Fee if Worker Hired	X		X						2
Agency Registration/Licensing Required	X				X				2
Department Enforcement	X	X	X	X	X	X			6
Penalties	X		X	X	X	X			5
Third Parties can only Contract with Registered Agencies	X								1
Anti-Retaliation	X								1
Private Right of Action	X					X		X	3
Recovery of Attorney Fees	X								1
Need to Post Employees Rights		X		X					2
Check Cashing Regulations			X		X			X	3
Total Policy Items Outlined	16	6	8	4	7	8	3	6	

all employees regardless of language or background by stating: “It is the Agency's position that, regardless of the precise regulatory language, the terms "train" and "instruct," as well as other synonyms, mean to present information in a manner that employees receiving it are capable of understanding.” (OSHA 2010). OSHA has several times clarified the joint obligations employment agencies and host employers share in training and protecting workers (OSHA 2013; OSHA 2012; OSHA 1994). Hopefully, efforts to identify these workers and their places of employment will allow OSHA to protect workers that otherwise might remain essentially invisible to regulatory protections.

On the state level, eight states have laws that deal directly with temporary workers (Illinois 2013, Massachusetts 2013, Rhode Island 2013, Texas 2013, New Mexico 2013, Georgia 2013, Arizona 2013, Florida 2013). Their different legal strategies are summarized in the table below. The strategy that has received the most attention has focused on temporary workers’ lack of knowledge about the terms and conditions of their employment. Massachusetts and Illinois have passed legislation that requires that temporary agency workers be provided with written information about the host employer as well as other job details. Specifically, when an agency sends a worker to a temporary position in either of these states, the worker must receive a notice stating: the name of the worker, the name and nature of the work to be done, the wages offered, the name and address of the destination for each worker, the terms of transportation, whether a meal or equipment are provided, contact information for the agency, and whether any special equipment, training or other safety gear is needed. In addition to this, workers must receive a wage notice that breaks down their pay and shows them the specifics of their income, although some workers have claimed that their employers violated these requirements. (Making Change at Walmart, 2012). As the table indicates, the other six states, Arizona, Georgia, Rhode Island, Texas, Florida, and New Mexico, have approached the industry from different angles as they have focused on solving other parts of the issue ranging from restricting charges to the worker to mandating a waiting room at the agency and requiring that workers sign consent forms before working with hazardous chemicals. The most common strategies were charge restrictions with seven of the eight state policies containing language referring to this; right behind that was six states having language requiring the provision of wage and pay notices to workers.

B. International

According to the Organization for Economic Co-operation and Development (OECD), in 2013 the U.S. was second to last among 32 OECD member countries in the quality of their legal protections for temporary workers (OECD, 2013). The OECD pointed to the fact that in the USA, there are no restrictions on the number of renewals or prolongations of temporary work assignments or on the maximum cumulated duration of the assignments given (OECD, 2013; Venn, 2009; OECD, 2002). In addition, there are few uniform authorization or reporting obligations in the set-up of temporary work insofar as every state processes temporary work agency licenses according to its own procedures. U.S. federal law provides the minimum workplace standards that are guaranteed for all workers. However, these standards do not explicitly require equal treatment of temporary workers and their permanent counterparts.

Other countries fall along a spectrum with respect to their legal approaches to temporary work agencies. Some countries have no restrictions while others regulate these agencies strictly. For example, the United States has no federal-level restrictions on temporary work agencies while Mexico and Turkey fall at the other extreme, holding that temporary work agencies are illegal within their borders (Venn, 2009). Most countries fall in between these two extremes of regulation.

In the European Union (EU), many member countries have legalized temporary work agencies and have created some regulations to protect workers. In 2002, the European Commission responded to the growing numbers of workers employed through temporary work agencies by proposing a directive that acknowledged discrimination against temporary workers and proposed minimum EU-wide standards for member states. Establishing a common minimum standard for all the EU member states was intended to eliminate businesses' 'race to the bottom'. In November 2008, the EU adopted the Temporary Agency Work Directive, which dealt directly with conditions of equal pay and employment benefits with respect to temporary work. The directive has two main principles set forth by Articles 4 and 5. Article 4 sets limits to ensure the protection of temporary workers by restricting and limiting temporary work. Article 5 requires that temporary workers be given the same or equal treatment as their permanent co-workers receive while employed (Directive 2008/104/ec).

In addition to the Directive of 2008, many EU member states have begun action on regulating to limit temporary work agencies to their traditional role of providing true temporary work. France established the French Labour Code of Section L. 124-7 that deems a temporary worker a permanent employee if he/she was employed through a temporary work agency for longer than the maximum period allowed (Labour Code, 2011; Voss et al., 2013). Other countries such as Luxembourg, Denmark, Spain and Greece have since established their own limits for what kind and duration of temporary work is permitted, although owing to an economic downturn, Spain recently extended the maximum period of temporary work to four years (Americanized Labor Policy, 2013). The creation and enforcement of time limits was intended to ensure that workers were not exploited as permanent temporary workers (Voss et al., 2013).

Israel is another country that has made strides in protecting temporary workers. In 1996, the Law of Employment by Labor Contractors (Enhanced Enforcement of the Labor Law, 2011) was passed in response to the booming temporary work businesses. Similar to the EU's 2008 Directive, the Law of Employment by Labor Contractors sought to protect temporary workers and their interests. Its main purpose was to regulate temporary work agencies, collect data, and to control payments (Stressman, 2000). Although it did not create specific time limits for temporary work, the new law did specify that after three years in a single position, a temporary worker would have to receive the same working conditions as permanent workers. The Israeli government found temporary work agencies and host businesses were exploiting loopholes in the law: temporary work agencies and employers encouraged temporary work and the early termination of temporary workers to avoid hiring workers as permanent employees (Stressman, 2000). In 2001, amendments were passed to limit temporary employment to a period of nine months (Enhanced Enforcement of the Labor Law, 2011). Should workers be employed for longer than nine months, they would no longer be considered temporary employees but as permanent employees to the

host employer. In addition, the amendments ensured that temporary workers must be provided with full benefits even for the nine months that they are employed by the agency.

For political or economic reasons, the U.S. may not follow the countries that have outlawed temporary work agencies. However, either the states or, relying on the interstate commerce power, the federal government, could follow the example of the EU, Israel, and other countries by restricting and regulating the actions of temporary work agencies. The OECD reports have shown little change in U.S. efforts in this direction (OECD, 2013; Venn, 2009). The U.S. needs policies that will enforce responsibility over the health and safety of temporary workers and ensure that they are not exploited.

Recommendations:

- 1. Temporary workers should be legally entitled to information about each new job they undertake.** Temporary workers lack sufficient information about their jobs when they enter a new workplace. As a result, they are poorly situated to know and exercise their rights. As discussed above, only Illinois and Massachusetts have laws that require agencies to provide a significant level of information to workers. All states should implement such requirements. In addition, **states should require agencies to use these notices as a vehicle to deliver basic information about workers' rights under the OSHA Act. OSHA should require this in all states as a matter of enhancing temporary workers' occupational safety and health.**
- 2. Improve temporary worker health and safety training.** Safety and health training for temporary workers is seriously inadequate, especially in hazardous industries such as construction, transportation, and manufacturing. Evidence from recent studies supports the concept that temporary workers often lack proper training due to the “disconnect” between the temporary staff agency and the job site during the hiring process (Harrison, 2013). This can be compounded by confusion as to which party is responsible for the protecting the temporary worker's health and safety, ultimately placing these workers at greater risk (Michaels, 2010).
- 3. Require an explicit agreement between agency and host employer with respect to worker health and safety.** To ensure that all parties involved in employing the temporary worker are working cohesively, an accountability contract should be created and agreed upon by the temporary worker agency as well as the employers at the job placement site to clearly establish their roles in protecting the employee's welfare. **This agreement should be actionable by temporary workers as third party beneficiaries.**
- 4. Institute required training for temporary workers in hazardous sectors following OSHA model.** Prior to commencing work in hazardous sectors, temporary workers should be required to undergo at least ten hours of training regarding workplace hazards, safety, and worker rights. Currently OSHA has an *Outreach Training Program*, which provides training for workers and employers on “the recognition, avoidance, abatement, and prevention of safety and health hazards in workplaces.” The program also provides information regarding workers' rights, employer responsibilities, and how to file a complaint. Through this program, workers can attend a 10-hour or 30-hour class conducted by OSHA-authorized trainers. Through this training, workers will become more knowledgeable about workplace hazards and their rights, thereby reducing injuries and fatalities. Moreover, a greater investment in time and training might lead to less turnover and greater workplace stability, which, in turn, should also lead to fewer injuries.
- 5. Require host employers, agencies, and temporary workers to communicate clearly and consent in writing to their individual responsibilities with respect to workplace hazards.** States should combine the right to know requirements of Illinois and Massachusetts with the Hazardous Chemical Consent form of Georgia to provide information about the types of hazards common to a position in the context of a consent form/contract agreed to by each of the three parties. The host employer should consent to a continued update to the agency and temp workers with respect to on-site hazards and to provide a training module focused on those hazards. The agency should agree to provide certification classes to workers and to send only those workers who have been trained to work in the hazardous environment. Workers should agree to take a training course from the agency

and then explicitly consent to working in the hazardous environment and to wearing proper PPE provided by the employer or the agency. In this way, the agency would be acting not only as a placement entity, but also as a contracted training facility for temporary workers. This training would have the added benefit of providing transferable skills to the workers for future jobs. Once again, any such agreements should be enforceable by workers.

6. Safety training must be culturally appropriate for each worker. For hired temporary workers who are not proficient in English, the lack of comprehension and clarity of workplace safety and protocol during training can place them at even higher risk for serious or fatal injuries. Providing culturally competent training sessions with proper translational materials and services would aid workers in better understanding the critical information needed for them to perform their tasks.

7. Provide free or inexpensive psychological and vocational support to temporary workers. Due to heightened levels of psychological stress inherent in temporary work, it is vital to provide workers with vocational interventions that focus on education, soft skills, and career management as well as access to low-cost counseling and therapy. This has been found to reduce stress and improve mental health by helping workers advance toward future goals (Brimhall, 2013). In so doing, it should also reduce rates of injury connected to impaired mental and psychological health.

8. Require agencies to publicize temporary employment data to facilitate worker protection. In Illinois and other states, agencies that place temporary workers are required to register and to fulfill certain legal requirements, for example certifying that they carry workers compensation insurance. A list of registered agencies appears on the Illinois Department of Labor website. Nationally, a majority of staffing revenue is contributed by just over 100 agencies, which have offices in a number of different states (Landhuis, 2013). All states should require agencies that place temporary workers to register and to report data on the number of workers that have been placed and the workplaces that have hosted them. Access to these data would enable OSHA to protect these workers more effectively.

In addition, prior to registration, the agencies should be required to certify that they have properly trained workers in health and safety or have ensured that host employers have done so.

9. Place restrictions on the length of temporary employment and require job benefits for long-term hires. There is evidence that some workers have remained in the same temporary positions for long periods of time (Grabell, 2013). Like many other countries, the United States should place time restrictions on temporary employment to ensure that temporary workers do not become permanent temporary workers. In addition, other countries have ensured that temporary workers receive benefits equivalent to those of their permanent coworkers. At some point, businesses must acknowledge and enhance the investment they have made in these workers as well as the investments of time and energy that the workers have made in the business. In so doing, these workers will gain in job security with all of the attendant benefits and businesses will benefit by lower rates of workplace injuries, higher rates of productivity, and a healthier workforce.

10. Create a private right of action for temporary workers to enforce OSHA requirements. OSHA is understaffed. The number of OSHA compliance officers per million workers actually decreased from 1980 to 2010 (AFL-CIO 2013). It is clear that the agency has been stretched, its capacity to protect worker health and safety compromised by budget cuts (Center for Effective Government 2013). The only way to insure that workplaces are regularly inspected and policed for health and safety violations is to create a private right of action for workers to enforce OSHA requirements thereby creating, in effect, a team of inspectors within each workplace.

11. Restrict temporary work in the chemical sector. Regarding the handling of hazardous chemicals, there may be some jobs that are simply too dangerous for temporary workers. Temporary workers are too often not properly trained, and, in some jobs, the stakes are too

high to risk allowing their use. These positions must be restricted to permanent employees who have been properly trained. As OSHA visits the issue of chemical safety pursuant to Executive Order 13650 (2013), it should consider the need to limit this part of the workforce to such employees. At the very least, in these positions, the burden of proof should be on the host employer to prove that these workers are properly trained in the specific risks inherent in these workplaces. The risks to the workers themselves, to other workers, and to the surrounding communities are simply too great to allow host companies and agencies simply to assert that adequate training has been provided.

12. Provide more detailed language in Process Safety Management Standard to include temporary workers. In the context of OSHA's charge to focus on Chemical Facility Safety, its review of the Process Safety Management standard, and its temporary worker initiative, the Process Safety Management standard should be amended to include specific protections for temporary workers. This could be done by more expansively and clearly defining the category of contract employees or by creating a new section specifically outlining protections for temporary workers within environments with highly hazardous chemicals. As noted in recommendation 11, temporary workers should be excluded from certain hazardous work with chemicals. However, where the inclusion of such workers is warranted, special efforts must be made to insure their safety and that of those around them.

13. Make OSHA 300, 300A, and 301 injury and illness logs more accessible. Employers with eleven or more employees are required to maintain OSHA injury and illness logs. Current and former employees have the right to access these records. However, for temporary workers, this right is complicated by the fact that the staffing agency is the employer of record while the logs are typically maintained by the host employer. **OSHA logs should be open to any temporary worker who has been assigned to a particular host employer. In addition, OSHA should require that such reports be kept electronically and submitted to OSHA. They should be made available through OSHA's website without employee identifiers.** Access to this information would greatly enhance the rights of workers and their representatives and advocates. In addition, it would assist OSHA in protecting workers by allowing researchers to explore and analyze injury and illness rates and trends.

Respectfully submitted,

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References

AFL-CIO (2013). Death on the Job 2013. <http://www.aflcio.org/Issues/Job-Safety/Death-on-the-Job-Report>. Accessed 12/4/13.

Americanized Labor Policy is Spreading in Europe. (2013) *The New York Times*. 12/4/13, B1, B4.

Amuedo-Dorantes C. (2002). Work safety in the context of temporary employment: The Spanish experience. *Industrial and Labor Relations Review*. 55(2): 262-285.

Arizona REV. STAT. ANN. §§ 23-551 to 553 (2013)

Audhoe SS, Hoving JL, Nieuwenhuijsen K, Friperon R, de Jong PR, Sluiter JK, Frings-Dresen MH. (2012). Prognostic factors for the work participation of sick-listed unemployed and temporary agency workers with psychological problems. *J. Occup. Rehabil.* 22(4):437-46.

Benavides F, Benach J, Diez-Roux A, & Roman C. (2000). How do types of employment relate to health indicators? Findings from the Second European Survey on Working Conditions. *Journal of Epidemiology & Community Health*, 54(7), 494-501.

Benavides F, Benach J, Muntaner C, Delclos G, Catot N, & Amable M. (2006). Associations between temporary employment and occupational injury: what are the mechanisms?. *Occupational and Environmental Medicine*, 63(6), 416-421.

Brimhall, A.(2013).Jail Education Solutions. Retrieved from <http://jaileducationsolutions.com/>Accessed 11/27/13.

Bureau of Labor Statistics (2005, February). Contingent and Alternative Employment Arrangements: February 2005. Washington, DC: US Department of Labor. Retrieved from <http://www.bls.gov/news.release/History/conemp.txt>

Bureau of Labor Statistics (2012). Quarterly Census of Employment and Wages. Washington, DC: US Department of Labor. Retrieved from <http://www.bls.gov/cew/data.htm>.

Center for Effective Government. (2013). What's at Stake: Austerity Budgets Threaten Worker Health and Safety. <http://www.foreffectivegov.org/files/budget/whatsatstake-workersafety.pdf>. Accessed 12/4/13.

Chicago Tribune. "Wal-Mart Hiring More Temporary Workers." *Chicago Tribune*. 13 June 2013. http://articles.chicagotribune.com/2013-06-13/business/chi-walmart-temporary-workers-20130613_1_temporary-workers-wal-mart-david-tovar Accessed 12/5/13.

Cummings KJ & Kreiss K. (2008). Contingent Workers and Contingent Health: Risks of a Modern Economy. *Journal of the American Medical Association*, 299(4), 448–450.

Directive 2008/104/ec of the European Parliament and of the Council, (2008).

Executive Order 13650. (2013). "Executive Order -- Improving Chemical Facility Safety and Security." <http://www.whitehouse.gov/the-press-office/2013/08/01/executive-order-improving-chemical-facility-safety-and-security> . Accessed 12/4/13.

Fischer M, Hellmann A, Wohlrab J, Marsch WC. (1998). [Burns from undisclosed acids in a liquid used by temporary workers. A recent problem in occupational medicine caused by a lack of information]. *Dtsch Med Wochenschr.* Feb 6;123(6):151-4.

Florida STAT. §§ 448.20 to 448.26 (2013).

Freeman, Harris, and George Gonos. (2009). "Taming the employment sharks: The case for regulating profit-driven labor market intermediaries in high mobility labor markets." *Employee Rights and Employment Policy Journal* 13: 285.

Georgia CODE ANN. §§ 34-10-1 to 34-10-6 (2013).

Grabell, M. (2013). The Expendables: How the Temps Who Power Corporate Giants Are Getting Crushed. <http://www.propublica.org/article/the-expendables-how-the-temps-who-power-corporate-giants-are-getting-crushed>. Accessed 12/9/13.

Harrell WA. (1990). Perceived Risk of Occupational Injury: Control over pace of work and blue-collar versus white-collar work. *Percept Mot Skills* 70, 1351-9.

Harrison S. (2013). Temp worker deaths raise concerns over safety: Training, clear procedures needed to avoid injuries. *Business Insurance*, 47(15), 3,31.

Hazard Communication, Code of Federal Regulations, CFR 1910.1200. (2013).

Hilton MF, Whiteford HA. (2010). Associations between psychological distress, workplace accidents, workplace failures and workplace successes. *Int Arch Occup Env Health.* 83(8)923-933.

Hinkka K, Kuoppala J, Väänänen-Tomppo I, Lamminpää A. (2013). Psychosocial work factors and sick leave, occupational accident, and disability pension: a cohort study of civil servants. *Journal of Occupational Environmental Medicine.* 55(2)191-197.

Illinois, (2013) 820 Illinois COMP. STAT. 175/1-99.

Enhanced Enforcement of the Labor Law 2011. (ISR-2011-L-94394) *Reshomot, Sefer Ha Choukem, 2011-12-19, No. 2326, P. 62 - P.79*

Kasarek A.R (2013). Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Administrative Science Quarterly*, Vol. 24, No. 2 (Jun., 1979), pp. 285-308

Kochan, T., Smith, M., Wells, J., & Rebitzer, J. (1994). Human resource strategies and contingent workers: The case of safety and health in the petrochemical industry. *Human Resource Management (1986-1998)*, 33(1), 55. doi: 224317476.

Kompier M, Ybema JF, Janssen J, Taris T (2009). Employment contracts: cross-sectional and longitudinal relations with quality of working life, health and well-being. *US National Library of Medicine National Institutes of Health J Occup Health.*;51(3):193-203

Labour Code [LC], 31 July 2006, including amendments up to 2 June December 2011.

Landhuis, Timothy. "2013 List of Largest U.S Staffing Firms and Market Share Analysis." *Addison Group*. Staffing Industry Analysts, 27 June 2013. Web. 25 Nov. 2013. <http://www.addisongroup.com/media/files/downloads/US_Largest_20131.pdf>.

Making Change at Walmart. (2012). Walmart and its Temp Agencies Violate Federal, Illinois Labor Law. <http://makingchangeatwalmart.org/2012/10/22/walmart-and-its-temp-agencies-violate-federal-illinois-labor-law/>. Accessed 12/4/13.

Massachusetts GEN. LAWS. ch. 149, § 159C (2013).

Mbaye I, Ntunzimbona I, Soumah M, Sow ML. (2003) [Acute hydrogen sulfite intoxication: report of three lethal cases occurred at a Senegalese chemical plant]. *Dakar Med.* 48(2):128-30.

Mbaye I, Fall MC, Sow MB, Sow ML. (1999). [Acute carbamate poisoning: apropos of 7 cases occurring in a Senegalese industrial unit]. *Dakar Med.* 44(1):119-22.

Mehta C, Baum S, Theodore N, Bush L. (2003). Workplace Safety in Atlanta's Construction Industry: Institutional Failure in Temporary Staffing Arrangements . http://www.urbaneconomy.org/sites/default/files/WorkplaceSafetyatlantareport_73_2003.pdf. Accessed 12/4/13.

Mental health promotion in the workplace – A good practice report. (2011). European Agency for Safety and Health at Work. p 1-41 Retrieved from <https://osha.europa.eu>

Michaels D. (2010). Testimony before Senate Committee on Health, Education, Labor, and Pensions. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=TESTIMONIES&p_id=1122.. Accessed 12/4/13.

Morassaei, S, Breslin, FC, Shen, M, Smith, PM. 2013. Examining Job Tenure and Lost-Time Claim Rates in Ontario Canada, Over a 10-Year Period, 1999-2008. *Occup. Environ. Med.* 70:171-178.

Newberry, Laura. "Temp Jobs Become Way to Go for Many Employers." *USA Today*. Gannett, 16 Aug. 2013. Web <http://www.usatoday.com/story/money/business/2013/08/16/economy-temporary-workers/2665645/> Accessed 11/25/13.

New Mexico STAT. §§ 50-15-1 to 15-7 (2013)

Occupational Safety and Health Administration (OSHA 2013a). Memorandum, https://www.osha.gov/temp_workers/temp_works_ois_coding.html. Accessed 12/4/13.

Occupational Safety and Health Administration (OSHA 2013b), Hazard Communication Standard, <https://www.osha.gov/dsg/hazcom/hazcom-faq.html#20>, Accessed 11/20/13.

Occupational Safety and Health Administration (OSHA 2013c), Protecting Temporary Workers, https://www.osha.gov/temp_workers/, Accessed 12/4/13.

Occupational Safety and Health Administration (OSHA 2013d), Hazard Communication, https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10099, Accessed 12/4/13

Occupational Safety and Health Administration (OSHA 2013e), Industry Profile for OSHA Standard 19101200; NAICS Economic Subsector - 3 digit, https://www.osha.gov/pls/imis/industryprofile.stand?p_esize=&p_stand=1910.1200&p_state=FEFederal&p_type=3, Accessed 12/4/13

Occupational Safety and Health Administration (OSHA 2013f), Industry Profile for OSHA Standard 19101200; NAICS Economic Subsector - 4 digit, https://www.osha.gov/pls/imis/industryprofile.stand?p_esize=&p_stand=1910.1200&p_state=FEFederal&p_type=4, Accessed 12/4/13

Occupational Safety and Health Administration (OSHA 2013g), Industry Profile for OSHA Standard 19101200; NAICS Economic Subsector - 5 digit, https://www.osha.gov/pls/imis/industryprofile.stand?p_esize=&p_stand=1910.1200&p_state=FEFederal&p_type=5, Accessed 12/4/13

Occupational Safety and Health Administration (OSHA 2012). Letter to Staffmark. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=28598. Accessed 12/4/13.

Occupational Safety and Health Administration (OSHA 1994). Letter to National Employment Service Corporation. https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=21393. Accessed 12/4/13.

Occupational Safety and Health Administration (OSHA 2010). OSHA Training Standards Policy Statement. <https://www.osha.gov/dep/standards-policy-statement-memo-04-28-10.html>. Accessed 12/8/13.

Organisation for Economic Co-operation and Development (OECD). (2013). Protecting jobs, Enhancing Flexibility: A New Look at Employment Protection Legislation. (pp. 65-126) Organisation for Economic Co-operation and Development. doi:10.1787/empl_outlook-2013-6-en

Organisation for Economic Co-operation and Development (OECD). (2002). Taking the Measure of Temporary Employment. (pp. 127-185) Organisation for Economic Co-operation and Development. doi:10.1787/empl_outlook-2002-5-en

Patussi V, Barbina P, Barbone F, Valent F, Bubbi R, Caffau C, Driussi C, Munafò G, Rosolen V, Venturini C, Zanin T, Zuliani C.(2008). Comparison of the incidence rate of occupational injuries among permanent, temporary and immigrant workers in Friuli-Venezia Giulia. *Epidemiol Prev.* 2008 Jan-Feb;32(1):35-8.

Process Safety Management of Highly Hazardous Chemicals, Code of Federal Regulations, CFR 1910.119. (2013)

Rebitzer JB. (1995). Job Safety and Contract Workers in the Petrochemical Industry. *Industrial Relations.* 34(1):40-57.

"Registered Day/Temporary Labor Agencies." *Employer Information.*: Illinois Department of Labor, 2013. Web <<http://www.illinois.gov/idol/EmployerInformation/Pages/ApprovedDTLSA.aspx> Accessed 11/25/13.

Roquelaure Y, Ha C, Gohier B, Dano C, Touranchet A, Leclerc A, Imbernon E, Goldberg M. (2007). Exposure to psychosocial stressors at work in the Pays de la Loire region in 2002. *Encephale.* Mar-Apr;33(2):160-8

Siskind F. (1982)Another look at the link between work injuries and job experience. *Mon Lab Rev* Feb. 1982 38-40.

Rhode Island GEN. LAWS ANN. §§ 28-6.10-1 to 6.10-5 (2013).

- Roquelaure, Y., Petit LeManach, A., Ha, C., Poisnel, C., Bodin, J., Descatha, A., & Imbernon, E. (2012). Working in temporary employment and exposure to musculoskeletal constraints. *Oxford Journals: Occupational Medicine*, 62(7), 514-518. doi: 10.1093/occmed/kqs004.
- Sarmiento-Salinas R, Lopez-Rojas P, Marin-Cotonieto IA, Godinez-Rocha A, Haro-Garcia L, Salinas-Tovar S. (2004). Risk factors associated with work-related accidents in the construction industry in the Valley of Mexico. *Gac Med Mex* 2004;140:593-7.
- Siskind, F. (1982). Communications: Another look at the Link Between Work Injuries and Job Experience. *Monthly Labor Review*. Feb. 1982:38-40.
- Smith CK, Silverstein BA, Bonauto DK, Adams D, Fan ZJ. (2010). Temporary workers in Washington state. *Am J Ind Med*. Feb;53(2):135-45.
- Stressman, J., & Achdut, L. (2000). Employment through Temporary-Work Agencies and Social Security Provisions: The Israeli Case. *Paper Prepared for the Year 2000 International Research Conference on Social Security*.
- Survey highlights rural-urban divide in workplace health and safety. (2009). European foundation for improvement of Living and working Conditions. p1-13. Retrieved from www.eurofound.europa.eu.
- Texas LAB. CODE ANN. §§ 92.001 to 92.031 (2013).
- U.S. Bureau of Labor Statistics, comp. "Current Employment Statistics Highlights." (2013): n. pag. 8 Nov. 2013. Web. <http://www.bls.gov/web/empsit/ceshighlights.pdf> Accessed 11/25/13.
- U.S. Bureau of Labor Statistics, U.S. Department of Labor - Injuries, Illnesses, and Fatalities (IIF) Program. (2013, April). *Contractor data from the Census of Fatal Occupational Injuries (CFOI)*. Retrieved from <http://www.bls.gov/iif/oshwc/cfoi/contractor2011.pdf>. Accessed 11/30/13.
- U.S. Bureau of Labor Statistics, U.S. Department of Labor - Injuries, Illnesses, and Fatalities (IIF) Program. (2013a, November). *Incidence rates of nonfatal occupational illness, by industry and category of illness, 2012*. Retrieved from <http://www.bls.gov/iif/oshwc/osh/os/ostb3576.pdf>. Accessed 12/4/13.
- U.S. Bureau of Labor Statistics, U.S. Department of Labor - Injuries, Illnesses, and Fatalities (IIF) Program. (2013b, November). *Incidence rates of nonfatal occupational injuries and illnesses by industry and case types, 2012*. Retrieved from <http://www.bls.gov/iif/oshwc/osh/os/ostb3581.pdf>. Accessed 12/4/13.
- U.S. Bureau of Labor Statistics, U.S. Department of Labor - Injuries, Illnesses, and Fatalities (IIF) Program. (2013c, November). *Numbers of nonfatal occupational illnesses by industry and category of illness, 2012*. Retrieved from <http://www.bls.gov/iif/oshwc/osh/os/ostb3578.pdf>. Accessed 12/4/13.
- U.S. Bureau of Labor Statistics, U.S. Department of Labor - Injuries, Illnesses, and Fatalities (IIF) Program. (2013d, November). *Numbers of nonfatal occupational injuries and illnesses by industry and case types, 2012*. Retrieved from <http://www.bls.gov/iif/oshwc/osh/os/ostb3583.pdf>. Accessed 12/4/13.
- U.S. Bureau of Labor Statistics, U.S. Department of Labor - Injuries, Illnesses, and Fatalities (IIF) Program. (2013e, August). *Fatal occupational injuries by industry and even or exposure, All U.S., 2012*. Retrieved from <http://www.bls.gov/iif/oshwc/cfoi/cftb0268.pdf>. Accessed 12/4/13.

U.S. Chemical Safety Board (2007). Investigation Report Refinery Explosion and Fire. Retrieved from <http://www.propublica.org/documents/item/csb-final-investigation-report-on-the-bp-texas-city-refinery-explosion>. Accessed 12/4/13.

U.S. Chemical Safety Board (2013). Retrieved from <http://www.csb.gov/csb-finds-fatal-2009-ndk-explosion-resulted-from-stress-corrosion-cracking-of-high-pressure-vessel-crystal-maker-failed-to-inspect-or-test-vessels-and-to-heed-earlier-warning-about-risk-to-public/>. Accessed 12/4/13.

U.S. Chemical Safety Board (2007), at <http://www.csb.gov/u-s-chemical-safety-board-concludes-organizational-and-safety-deficiencies-at-all-levels-of-the-bp-corporation-caused-march-2005-texas-city-disaster-that-killed-15-injured-180>. Accessed 12/2/13.

U.S. Chemical Safety Board (2003), at http://www.csb.gov/assets/1/19/West_Digest.pdf. Accessed 12/4/13.

U.S. Census of Fatal Occupational Injuries (CFOI) (2011). <http://www.bls.gov/iif/oshwc/cfoi/contractor2011.pdf>

U.S. Census Bureau, American Community Survey (ACS) 2008–2010. Integrated Public Use Microdata Series: Version 5.0. Minneapolis: University of Minnesota.

"U.S. Companies Increasingly Turning to Temporary Workers to Fill Positions." *Fox News*. FOX News Network, 08 July 2013. Web <http://www.foxnews.com/us/2013/07/08/us-companies-increasingly-turning-to-temporary-workers-to-fill-positions> Accessed 11/25/13.

U.S. Government Accountability Office (GAO) (2006). *Employment Arrangements: Improved Outreach Could Help Ensure Proper Worker Classification*. Washington, DC: General Accounting Office. <http://www.gao.gov/products/GAO-06-656>. Accessed 12/4/13.

Venn D. (2009). Legislation, collective bargaining and enforcement: Updating the OECD employment protection indicators. Retrieved from: www.oecd.org/els/workingpapers

Voss, E Vitols, K et al. (2013). The role of temporary agency work and labour market transitions in europe: Institutional frameworks, empirical evidence, good practice and the impact of social dialogue, european confederation of private employment agencies, brussels. *European Confederation of Private Employment Agencies, Brussels*.

Waehrer G, Dong X, Miller T, Haile E and Men, Y. (2007). Costs of Occupational Injuries in Construction in the United States. *Accident Analysis and Prevention*. 39:1259-1266.

Wagenaar AF, Kompier MAJ, Houtman, ILD, Bossche SNJ, Taris TW. (2012). Impact of employment contract changes on workers' quality of working life, job insecurity, health and work-related attitudes. *Journal of Occupational Health*. 51:193-203.

Wilson, Jill. "Immigration Facts: Temporary Foreign Workers." *The Brookings Institution*. The Brookings Institution, 18 June 2013. Web <http://www.brookings.edu/research/reports/2013/06/18-temporary-workers-wilson> Accessed 11/24/13.

Wong TW. Occupational injuries among construction workers in Hong Kong. *Occup Med (Oxf)* 44, 247-52 (1994).