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The Preponderance of Workplace Injuries in Healthcare Settings and Implications of the Recently Concluded OSHA National Emphasis Program (CPL 03-00-016)

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Abstract: Workplace injuries are particularly prevalent in healthcare settings. Despite a decreasing injury trend over the past decade, the incidence rate is significantly greater (more than double) in healthcare than all other private industry combined (7.4 vs 3.6 incidents per 100 workers). Not all healthcare settings are equal though, and nursing and residential care facilities and hospitals stand out as having the greatest rates far above the mean for healthcare settings. Within hospitals (and likely also in nursing and residential care facilities) the greatest total and mean per injury costs are associated with strains (musculoskeletal disorders), slips, trips, and falls, and patient interactions (workplace violence). From 2012 to 2015 OSHA conducted a National Emphasis Program (NEP) focused on musculoskeletal disorders, slips, trips, and falls, workplace violence, bloodborne pathogens, and tuberculosis within nursing and residential care facilities and hospitals. This program produced record numbers of inspections and citations, causing healthcare facilities to reevaluate their health and safety programs.

Navigating the multitude of OSHA regulations can be challenging, especially considering the greater number of inspections and citations now in force. Citations to nursing and residential care facilities and hospitals, relating to the target enforcement areas in the NEP, have ranged from $12,000 to $201,000. The most commonly cited violations relate to bloodborne pathogens and workplace violence. This text outlines some of the basic resources available to safety professionals to achieve compliance within the target areas. Given that OSHA has reemphasized the five target areas addressed in the NEP indefinitely, the authors advocate a proactive approach to these costly safety and health issues.

Keywords: OSHA, Healthcare, Ergonomics, Slips, Trips, Falls, Musculoskeletal Disorders, Workplace Violence, Bloodborne Pathogens, Tuberculosis

1. Introduction

Workplace injuries continue to impose a significant risk to employees, burden the healthcare system, and cost billions of dollars each year. Most recent estimates suggest that the *direct* costs of workplace injuries for 2012 where in excess of $60 billion (*2014 Liberty Mutual Workplace Safety Index*, 2015). These costs do not include *indirect* costs, such as worker reassignment, training, loss of productivity, etc., which have been estimated to be four times the direct cost; $240 billion ("Estimating and calculating the true cost of workplace injuries," 2015), bringing the total estimated cost of workplace injuries to approximately $300 billion.

A healthcare setting presents many common hazards, but also many unique hazards. Incidence rates also in healthcare are typically higher than those observed in other industries. In an effort to curb these workplace hazards and injuries in healthcare settings the Occupational Safety and Health Administration (OSHA) has recently concluded a National Emphasis Program (NEP) which targeted 5 select areas of workplace safety (*National Emphasis Program CPL 03-00-016 - Nursing and Residential Care Facilities (NAICS 623110, 623210 and 623311)*, 2012). Fines, resulting from OSHA inspections and violations, have grown in number and severity. To avoid costly fines (and the commonly associated 'bad press'), healthcare facilities should proactively combat workplace safety hazards.

The purpose of this paper is to review the current state of workplace injuries in healthcare settings, examine the details of the OSHA NEP, and discuss the necessary steps healthcare facilities should take to satisfy OSHA requirements and reduce workplace injuries.

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2. Healthcare Injury Statistics

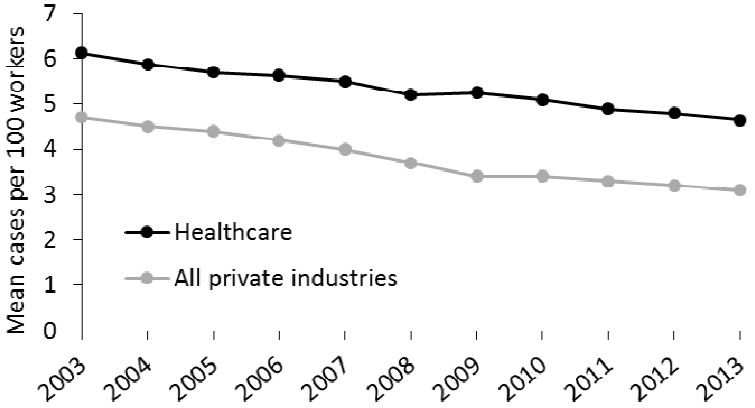

Figure 1. Mean Non-Fatal Workplace Injury Cases per 100 Workers in for Healthcare vs All Other Industries from 2003-2013 (*2013 Employer-reported Workplace Injuries and Illnesses*, 2015).

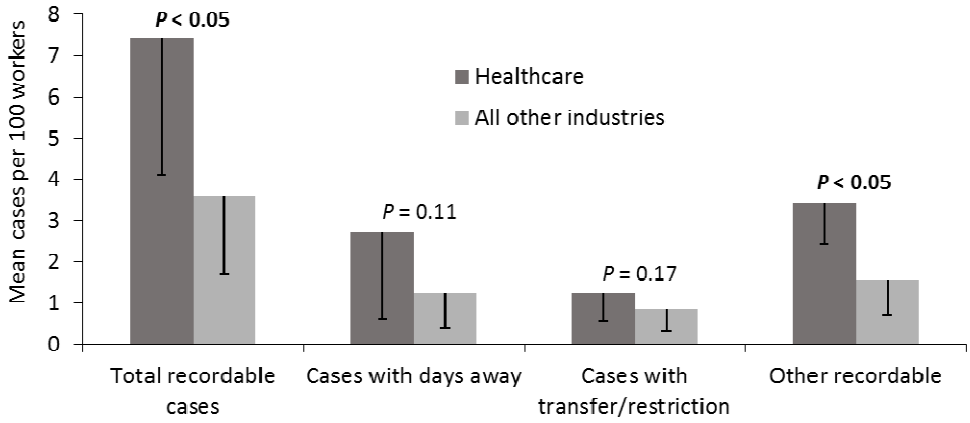

Figure 2**.** Mean Non-Fatal Workplace Injury Cases per 100 Workers in 2013 for Healthcare vs All Other Industries by Case Type (*2013 Employer-reported Workplace Injuries and Illnesses*, 2015). *P-v*alues for Two-Tailed Independent *T*-tests Are Given Above Each Measure and Significant Tests (***P* < 0.05**) Are **Bolded**. Error Bars Are in Standard Deviation.

Healthcare settings have a greater rate of workplace injuries than all other industries (*2013 Employer-reported Workplace Injuries and Illnesses*, 2015). Figure 1 illustrates the trend of decreasing injury rates from 2003-2013. Although both healthcare and mean private industry rates exhibit decreasing trends, healthcare rates are consistently higher than the mean for all private industries. Figure 2 demonstrates that healthcare facilities have a greater rate of total recordable cases (7.4 vs 3.6), cases resulting in days away (2.7 vs 1.2), cases with job transfer or restriction (1.2 vs 0.6), and other recordable cases (3.4 vs 1.6) for 2013. It is important to note that both total recordable cases and other recordable cases are significantly higher for healthcare settings than all other industries. While cases with days away from work and cases with transfer or restriction are not significant between groups, the rate in healthcare is at least double than that of all other industries. These data demonstrate that working in healthcare facilities presents a significantly greater risk (more than double) than that experienced by the mean member of the workforce.

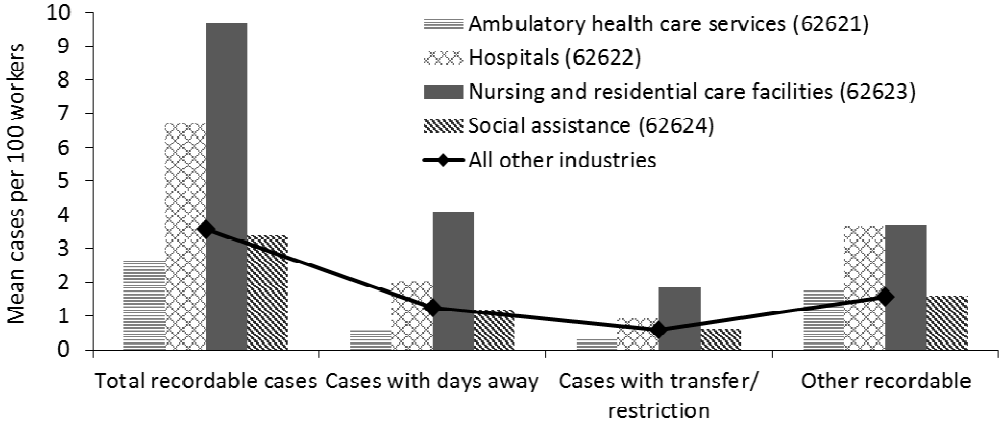

Figure 3. Mean Non-Fatal Workplace Injury Cases per 100 Workers for Categories of Healthcare Workplaces vs All Other Industries by Case Type (*2013 Employer-reported Workplace Injuries and Illnesses*, 2015).

The North American Industry Classification System (NAICS) divides healthcare workplaces (62xxx) into four primary categories; ambulatory and health care services (62621), hospitals (62622), nursing and residential care facilities (62623), and social assistance (62624). Figure 3 presents the mean workplace injury rates within those groups for comparison within themselves and all other industries. Nursing and residential care facilities and hospitals have injury rates consistently higher than those of ambulatory and health care services, social assistance, and all other industries. Specifically nursing and residential care facilities has the single largest rate of total recordable cases (9.7) compared to *any other individual industry* (*2013 Employer-reported Workplace Injuries and Illnesses*, 2015). Given these data, it is no surprise that the OSHA NEP was targeted at nursing and residential care facilities.

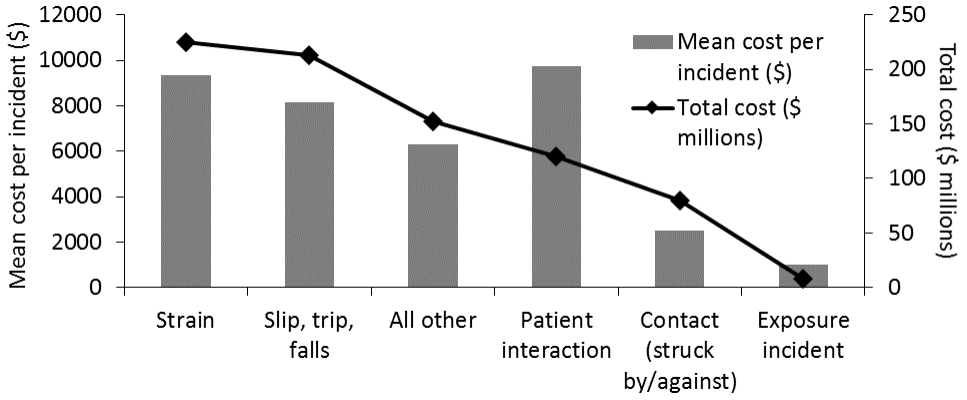

Figure 4. Mean and Total Cost per Hospital Workplace Injury/Incident by Case Cause (*Hospital Workers' Compensation Benchmark Study*, 2014).

Within healthcare settings the cost of a workplace injury varies widely based on the cause. Figure 4 represents data compiled by the insurance company Beecher Carlson (*Hospital Workers' Compensation Benchmark Study*, 2014) for the mean and total costs of hospital workplace injuries by cause. Strain injuries stand out as having the highest total cost ($225.3 million) and second highest cost per incident ($9,335). Injuries within the category typically have causes which include excessive force, repetition motion, and awkward postures. Following strain injuries slips, trips, and falls with a total ($213 million) and mean ($8,161) cost which rivals that of strain injuries. The total and mean costs of injuries begin to fall quickly after these two causes, indicating less severity. However, patient interaction stands out, with the highest mean cost per incident ($9,757), although the total cost of these injuries is comparatively low ($119.7 million). This category (although not

exclusively) includes workplace violence, which remains a major concern at hospitals. Although these data do not refer to nursing and residential care facilities, as targeted by the OSHA NEP, they are emblematic of injury cost distributions across healthcare settings. Ergonomics, slips, trips, and falls, and workplace violence are three of the five major categories addressed by the OSHA NEP.

The purpose of this section was to present current data regarding the preponderance of workplace injuries in healthcare settings. Despite a trend of decreasing injury numbers the rates of injury in healthcare settings remain higher than the mean and significantly higher than all other industries. Breaking down the data into more discrete units it is clear that nursing and residential care facilities stand out as the major source of workplace injuries for healthcare settings. Within healthcare settings we find that ergonomics, slips, trips, and falls, and workplace violence compromise the majority of injury related costs. Given these data, it comes as no surprise that OSHA developed a NEP to target this 'high-risk' group. To help reduce workers' compensation costs, lessen risk of citation, and develop a positive safety culture, healthcare settings should proactively address these common safety issues.

3. OSHA National Emphasis Program (CPL 03-00-016)

Based on similar calculations, graphs, and statistics as shown above, OSHA began NEP (CPL 03-00-016) in 2012. This program was completed in April of 2015 (*National Emphasis Program CPL 03-00-016 - Nursing and Residential Care Facilities (NAICS 623110, 623210 and 623311)*, 2012). As mentioned above, it focused on five workplace hazards that were deemed as critical within healthcare settings; musculoskeletal disorders (MSDs) and overexertion, workplace violence (WV), bloodborne pathogens (BBP), tuberculosis (TB), and slips, trips, and falls (STFs). The data presented above may or may not include BBP and TB data, depending on whether actual injury resulted during exposure. Resulting from the NEP, OSHA has decided to indefinitely continue their targeted inspections (Dougherty, 2015).

OSHA primarily enforces/entices employers to comply with regulations through the use of fines and citations. Therefore, the purpose of the NEP was both to promote programs to address the five focus areas, but also to increase inspection frequency and citation severity for noncompliant facilities. Not only do fines impose a significant financial burden on healthcare facilities, but also result in negative news coverage, further damaging the reputation of the facilities.

3.1 Musculoskeletal Disorders

MSDs have always been a controversial topic for OSHA. There is no specific regulation which requires workplaces to be free of or employers to minimize ergonomic hazards, but can nonetheless cite employers under the "General Duty Clause". OSHA emphasizes the development of an adequate MSD risk training program and providing assist devices to help minimize risk. Studies have demonstrated the efficacy of implementing ergonomic programs and providing assist devices. Fujishiro, Weaver, Heaney, Hamrick, and Marras (2005) followed units in 86 nursing homes and residential care facilities, comparing MSD injury rates before and up to 2 years after ergonomic interventions. Here, both ergonomic consultation and financial assistance for the purchase of assist devices was offered. Significant decreases were seen for both back and other injuries. The total MSD rate decreased from 12.32 to 6.64 per 100 employees, which far exceeded the national average decline for nursing homes and residential care facilities.

OSHA provides a useful guide, directed at nursing homes, to help reduce injuries and aid compliance. The "Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders" (*Guidelines for Nursing Homes: Ergonomics for the Prevention of Musculoskeletal Disorders*, 2009) breaks down MSD risk into patient handling activities and 'other'. The solutions offered range from the implementation of a training program (lifting techniques, identifying hazardous tasks, etc.) to the purchase of assistive devices. Little information is offered regarding the expectations that OSHA inspectors have when they visit facilities.

Examining the OSHA NEP documents more closely we find that certain guidelines do exist for inspections. Specifically OSHA inspectors are told to focus on; establishing incidence and severity rates, and program evaluation (which includes program management, program implementation, and employee training). In an appendix to the NEP, example wording is even given for citations regarding patient handling, requiring only the insertion of the date and type of exposure. It should be noted that few news examples of OSHA citations issued for ergonomic and strain hazards exist, suggesting that, as long as a good-faith effort exists on the part of the employer, OSHA is more lenient regarding these hazards. This may be partially due to multifaceted nature of MSDs, making a cause and effect argument difficult.

3.2 Workplace Violence

Healthcare settings pose a higher than average risk of WV, due to the frequent interaction with patients. Figure 4 illustrated that patient interaction (which includes WV) has the highest mean cost per case, although the total cost is relatively low. One explanation for this may be that, although WV is a less common occurrence (low total cost), each incident is very costly. OSHA has been very active with regard to providing the necessary information to maintain compliance, investigating healthcare facilities with high WV incidence, and issuing fines for noncompliance. A guide was also recently released to help safety professionals achieve regulation compliance and avoid fines (*Guidelines for Preventing Workplace Violence for Healthcare and Social Service Workers (3148-04R)*, 2015).

In 2011 OSHA issued a new instruction to guide inspections and inspectors for investigations of WV ("Enforcement Procedures for Investigating or Inspecting Workplace Violence Incidents," 2011). Specifically inspectors should determine if the workplace contains known risk factors, is in an industry highly susceptible to WV, and whether abatement measures are readily available. When inspections are conducted the primary focus is similar to that of MSDs. An inspector examines the records, reviews the required WV safety plan, and interviews employees. Written safety plans are required and these must document preventive and reactive measures, as well as employee training.

As a result of the OSHA NEP focus on WV, numerous costly fines have been issued. A common complaint in these fines is the 'lack of an adequate safety program'. This means that a formal program may not be written, measures to deal with incidents are not consistent or documented, and/or training is inadequate. In May 2012 (shortly after NEP inception) a medical facility in Wisconsin was cited $12,000 for matters regarding WV after an employee filed an OSHA complaint (Allen & Burke, 2012). A facility in Brooklyn, NY was fined $78,000 for not taking measures to prevent injuries, when over 40 incidents were reported within a two month period (Fitzgerald & Bowser, 2014). Providing employees with the tools necessary to help reduce WV incidents is critical to avoid incurring workers' compensation and citation costs.

3.3 Bloodborne Pathogens and Tuberculosis

Although BBP and TB are treated as separate issues under the NEP, the measures used to combat them are similar. Both of these hazards deal with potentially infectious material, waste, and patients. While every area of potential hazard and injury requires a written plan, BBP and TB measures are more tangible, requiring specialized equipment and following standard procedures. For example, suspected TB patients are often required to be isolated in negative pressure rooms with controlled access. An OSHA inspector can determine the presence of such a room (or one that can be readily converted), and that all environmental and access controls are present. Similarly, BBP measures require the use of self-sheathing needles, biohazard containers, sharps containers, waste logs, etc. These can be readily examined by the OSHA inspector to ensure compliance and consistency with the written documents and training requirements.

Compliance and citations under BBP and TB is also easier than with MSDs and WV. The OSHA BBP standard came into effect in 2000 and outlines the basic requirements for compliance ("Toxic and Hazardous Substances - Bloodborne pathogens," 2000). Despite the practices outlined by OSHA being considered standard in healthcare, citations relating to the BBP standard are the top six citations issued; failure to train, maintain a control plan, engineer out hazards, use protective equipment, keep training records, and poor housekeeping practices (Casey, 2014). In 2014 a hospital in Nevada was fined $39,600 following a TB outbreak during which employees did not follow their own safety manual (Gonzalez, 2014). A massive fine of $201,000 was levied against a hospital in New York in 2015 when management ignored complaints that their laundry bags were breaking open, causing staff to handle potentially infectious linens.

Clearly, OSHA has made BBP and TB standards a priority enforcement area. Resources describing what is required, what inspectors look for, and examples of successful programs are provided by OSHA and various other resources. Due to the explicit nature of these regulations, citations are often considered 'willful', resulting in high fines.

3.4 Slips, Trips, and Falls

The criteria for STF hazards in healthcare settings is less clear than in other injuries, e.g. construction, industry, etc. The fast paced nature of healthcare, frequently combined with patient handling tasks elevates STFs to a higher risk. This helps explain why STFs have the second highest total and third highest mean cost. Thankfully, very few tasks in healthcare require work from an elevated surface. Most of the preventative measures for STFs are written; requiring spills to be cleaned up quickly, signs to the posted, damaged flooring to be replaced, etc. A formal safety plan for a healthcare facility should include provisions regarding such procedures. However, it is important to realize that personal protective equipment can be implemented to minimize risk too, e.g. requiring/providing non-slip shoes.

Since STFs are common in a wide variety of industries there are many potential regulations under which STFs may be cited including '1910.22 - Walking-Working Surfaces - General requirements' for maintaining clean and dry floors,

'1910.145 - General Environmental Controls - Specifications for accident prevention signs and tags' for posting adequate signage, '1910.36 - Means of Egress - Design and construction requirements for exit routes' for keeping exit areas clear, and '1910.132 - Personal Protective Equipment - General requirements' for providing proper safety equipment. The BLS statistics indicate that STFs are a costly and common problem in healthcare settings. Employers should be proactive to reduce the risk of injury and potential for OSHA citations.

4. Conclusions

The current BLS figures indicate that injury rates are declining in healthcare settings. However, the mean rate remains significantly higher in healthcare settings than in all other industries, specifically in nursing and residential care facilities and hospitals. The recently concluded OSHA NEP (CPL 03-00-016) targeted five major areas of hazards that are particularly prevalent in nursing and residential care facilities. Citations and high fines were issued frequently during this time. Due to the success of this program, the harsher inspections guidelines have been continued indefinitely.

Resources to aid in achieving compliance are provided by OSHA and many other sources. Despite the availability of resources, citations regarding easily corrected problems are frequently issued. These new OSHA inspection guidelines for healthcare facilities indicate that employers should take proactive measures to ensure compliance, rather than hope for leniency during inspections.

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