EFFECTIVENESS OF OSHA OUTREACH TRAINING ON CONSTRUCTION WORK-RELATED INJURY RATES

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ABSTRACT

Despite the size and breadth of the Occupational Safety and Health Administration's (OSHA) Outreach Training program for the construction industry, there is limited information on its impact on rates of work-related injury. In a 9-year (2000-2008) dynamic cohort of approximately

INTRODUCTION

Safety training is frequently recommended and prescribed for preventing work-related injury and illness. For workers in the dangerous construction industry, safety training may lead to important increases in worker knowledge and attitudes about occupational safety (Sokas et al. 2009, Williams et al. 2010, Forst et al. 2013) as well as measures of safety behavior (Trabeau et al. 2008, Kaskutas et al. 2013, Ruttenberg 2013). Though evidence supporting safety training's prevention of adverse health outcomes (e.g., injuries, illnesses) is limited (Cohen et al. 1998, Robson et al. 2010, Robson et al. 2012, Mullan et al. 2015), encouraging examples can be found among plumbers/pipefitters (Kinn et al. 2000), laborers (Dong et al. 2004, Williams et al. 2010), carpenters/drywall tapers (Johnson and Ruppe 2002), residential construction workers (Darragh et al. 2004), and railway construction workers (Bena et al. 2009).

When the Occupational Safety and Health Act of 1970 was established, the OSHA Training Institute (OTI) developed a series of short hazard awareness training courses, including 10-hour (for entry level workers) and 30-hour (for workers with safety responsibilities) courses for the construction industry. OTI trained federal occupational safety personnel to deliver the courses to federal employees in locations around the US. The training courses cover the "recognition, avoidance, abatement, and prevention of safety and health hazards in workplaces" and provide "information on workers' rights, employer responsibilities and how to file a complaint" (OSHA 2014). In the 1990s, OSHA began permitting authorized providers to offer this training in the private sector, and industry demand drove explosive growth in delivery of "OSHA-10" and "OSHA-30" for construction. Trainers had issued less than 20,000 OSHA-10 and OSHA-30 cards each year in the early 1990s; since 2010, more than 500,000 workers per year have earned an OSHA-10 or OSHA-30 card. Joint labor-management apprenticeship programs providing vocational training to North America's union-sector construction workers were among the earliest and largest adopters of OSHA Outreach Training. Today nearly all construction trade unions have incorporated OSHA-10/OSHA-30 training into their apprenticeship curricula. It may be required by an employer (Wilkins 2011), and some states mandate it prior to working on publicly-funded building projects (Sinyai et al. 2013, Taylor 2014).

Safety-forward gains in construction workers' knowledge and attitudes (Sanyang 2007, Sokas et

- Stratified by calendar time, worker characteristics, and predominant type of work, quantify rates, rate ratios (RR), and 95% confidence intervals (CI) examining the relationship between outcomes and OSHA Outreach Training. Contrast patterns in rates observed for work-related injuries overall, by paid time loss (TL) and costs, and for specific mechanisms of injury.

METHODS

As part of prior research, the researchers – with assistance from the Carpenters Trusts of Western WA (CTWW) and the WA State Department of Labor and Industries (L&I) – created a cohort of union carpenters examine patterns in work-related injury rates (McCoy et al. 2013). The cohort comprises union eligibility, membership, and WC claims data files, linked at the individual level in a de-identified manner through use of a unique member number.

- <u>Union eligibility and membership files</u>, from the CTWW, contain for each carpenter: a unique member number (assigned by CTWW and lacking identifying details), date of birth, gender, monthly union hours worked, data of union entry, and union local. The union membership files contained information on all union members, regardless of hours worked. However, the study cohort was limited to individuals who worked   3 months of union hours, with observation beginning in the month eligibility criteria were met (i.e., the 3rd month of union work). As in prior research with these data (e.g., (Lipscomb et al. 2014)), carpenters were assigned a predominant type of work based on the work most commonly performed by the union local to which they belong: residential building, light/heavy/mixed commercial, drywall installation, millwrighting, and piledriving. Some carpenters were affiliated with a union local outside of WA State for which predominant type of work information was not available.

- <u>WC claims data files</u>, provided by the WA State Department of L&I, contain for each claim: date of event; date of claim; open/close status; ANSI/OIICS codes describing the event nature, mechanism, body part affected, and source; TL status; number of paid TL days (with TL compensation paid after the 3rd calendar day of being medically unavailable for work, not including the day of injury, in WA State); and associated costs. A TL claim is one in which