

### D4.3

**Title: *The Evaluation of State-Based Approaches to Workplace Violence Prevention***

Authors: Bowyer ME, Frazer JA

During the 5-year period from 1996 to 2000, there were an average 766 workplace homicides annually in the U.S. In 2001, there were 639 workplace homicides, the lowest number since the Census of Fatal Occupational Injuries began in 1992. It is not clear what factors have influenced this reduction and whether it will be sustained in subsequent years. There were an estimated 1.7 million nonfatal workplace victimizations each year from 1993 to 1997, accounting for 18% of all violent crime during the 7-year period.

As the risks for workplace violence have been more completely described and recognized over the last decade, states and other policy-makers have begun to develop statutes, administrative regulations, or technical assistance information for workplace violence prevention. Unfortunately, there have been no rigorous evaluations of the effectiveness of any of the regulatory or other state-based efforts undertaken to date.

NIOSH has conducted an inventory of state-based approaches to workplace violence prevention to serve as a starting point for in-depth evaluations of the various efforts that have been implemented. Preliminary results indicate that there are some states, such as California and Washington, that have mandated requirements for training or other assessment of workplace violence risks, especially in particular high risk settings such as health care or late night retail. Others, such as Michigan, Minnesota, and Connecticut conduct special training programs related to workplace security. Some states (e.g., Indiana, Minnesota, Alaska) have issued general duty clause citations for workplace violence hazards. The availability of data on workplace violence incidents before and after implementation of various efforts or data on comparable areas with and without interventions will dictate the ability to conduct comprehensive evaluations of the various strategies employed by the States.

### D4.4

**Title: *Workplace Violence Prevention in the Mental Health Setting***

Authors: Lipscomb JA, McPhaul K, Soeken K, Geiger Brown J, Choi M

Significance: Workplace violence is a significant hazard in the healthcare sector. The National Crime Victimization Survey found assaults among mental health workers were four times that of healthcare workers. In 1996, OSHA published "Guidelines for Preventing Workplace Violence for Health Care and Social Service Workers". The purpose of this study was to evaluate the effectiveness of these guidelines in the in-patient mental health

care setting.

Methods: The OSHA guidelines provided the framework for the intervention in four study facilities while three facilities served as controls. Two measurement tools, a pre-and post- intervention survey and a computerized data system (OIRS) reported assault injuries, were used to evaluate intervention effectiveness one year following program implementation.

Results: Four hundred seventy-six direct care staff completed the pre-intervention survey (94% response rate). At baseline over one quarter of staff reported > 25 threats, and over 50% reported some type of physical injury in the past 12 months. As a group, the OSHA elements were significant predictors of assault ( $p < .001$ ). A high level of management commitment was associated with a reduced odds of violence (OR .32, 95% CI .14 - .75). Work-related variables were significantly related to violence ( $p < .001$ ); 10 of 11 variables entered were retained in the final model. Overall, the model was significant (94.29,  $df = 14$ ,  $p < .001$ ); these predictors explained 39% of the variance in violence directed workers in these cross-sectional data. A comparison of pre- and post-intervention survey and OIRS data is underway and will be presented.

Conclusion: Though the OSHA guidelines were published in 1996, to the best of our knowledge, this NYS project is the first to evaluate their effectiveness in health care. Direct care staff involvement in identifying and implementing violence prevention strategies is anticipated to improve overall workplace health and safety.

### Session: D5.0

**Title: *Special Populations: Injuries Among Youth and Hispanics***

Moderator: Dawn Castillo

#### D5.1

**Title: *Preventing Youth Worker Fatalities***

Authors: Tierney JM, Higgins DN, Hanrahan LP, Washburn MJ

This presentation describes the Fatality Assessment and Control Evaluation (FACE) program and summarizes in-depth data collected on 59 young worker fatalities in 26 states. These investigations were conducted between May 1986 and February 2002.

Young workers ranged in age from 9 to 17 years, with a mean age of 15.28 years; 21 were working in the agriculture/forestry fishing industry, 12 in construction, 10 in manufacturing, 8 in services and 8 in the retail industry. The majority worked as laborers. Ninety-three percent were male.

Each investigation resulted in the formulation and dissemination

tion of preventive strategies to help prevent future similar occurrences. For an example of state FACE activities, the presentation describes the Wisconsin FACE program's efforts to foster collaboration between regulatory agencies, researchers, educators, occupational safety and health professionals, and to integrate efforts aimed at improving safety for working youth.

### D5.2

**Title: Anthropometric Differences among Hispanic Occupational Groups**

Authors: Spahr JS, Kau TY, Hsiao HX, Zwiener JV

The Census Bureau predicts that Hispanics will represent 25% of the U.S. population by 2050. Employment distributions reveal that Hispanic workers tend to be more heavily represented in higher risk industries and occupations than other racial/ethnic groups. The results from the 2000 Census of Fatal Occupational Injuries (CFOI) program show higher fatal and non-fatal workplace injuries and illness rates for Hispanic workers than for other racial/ethnic groups, and that their rates are increasing.

This study reports anthropometric measurements of Hispanic workers recorded in the Hispanic Health and Nutrition Examination Survey (HHANES), from 1982-1984. These data are the most current measurements available from a national survey of Hispanic civilians. It describes various physical body measurements across Hispanic occupational groups among three distinct ethnic sub-groups: Mexican, Cuban, and Puerto Rican origin. The analysis of the HHANES data shows that weight, size and body segment measurements of some Hispanic occupational groups differ significantly among Hispanics, and differ significantly from other similar occupational groups of non-Hispanic races described in other non-military U.S. anthropometric databases. For example, Hispanics are 5cm smaller than other U.S. racial groups regardless of gender. Cuban-Americans have the tallest stature, Mexican-Americans the broadest shoulders, and Puerto Ricans the smallest body segment circumferences.

Anthropometry is the study of human body size and proportions. In occupational health and safety applications, anthropometric measurements are used to evaluate the interaction of workers with their tasks and tools. Inappropriate fit of PPE or accommodation of the workplace to the size of the worker can compromise their performance and safety. Those who evaluate, design, or modify the human-machine interface for Hispanic occupational groups need to know these anthropometric differences.

### D5.3

**Title: Fatal Occupational Injuries among Hispanic Construction Workers of Texas, 1997 To 1999**

Authors: Fabrega V, Starkey S

Hispanic construction workers, particularly those born outside of the United States, are a growing segment of the Texas workforce and are increasingly the victims of on-the-job fatalities. This study examines occupational fatality characteristics among Hispanic construction workers utilizing records collected by the Texas Workers' Compensation Commission for the Bureau of Labor Statistics, Census of Occupational Fatal Injuries program.

Of the 370 fatalities recorded from 1997 to 1999, 179 cases (45.5%) involved Hispanic workers—109 of who were born in a foreign country. The fatality rate for Hispanic construction workers was 23.5 per 100,000 workers compared to 21.2 for non-Hispanic workers. Many fatality injured Hispanic construction workers shared similar characteristics including: low skill level, young age and foreign birthplace.

Hispanic workers employed as construction laborers, helpers, and roofers had the highest number of fatalities. Businesses with fewer than 10 workers employed forty-two percent of all Hispanic decedents, and businesses with more than 100 employees comprised twenty percent of the fatalities. The leading causes of Hispanic fatalities were: transportation incidents, falls, and exposure to harmful substances.

### D5.4

**Title: Farm Youth Can Be Reliable Reporters of Their Daily Injury Experiences**

Authors: Wilkins JR III, Crawford JM, Koechlin KM, Shotts L, Elliott M, Bean TL

A longitudinal study of children and adolescents 8-18 years of age exposed to agricultural hazards was conducted to empirically develop multivariable risk prediction models of agriculture-related injury and to derive work guidelines that parents and other caregivers could use to judge the age and developmental appropriateness of farm chore assignments. Longitudinal data on all unintentional injury events (and relevant exposures) were obtained through a modified form of Participant Event Monitoring (PEM), where youth were expected to report their injury experiences in a semi-structured daily diary over a 13-week period. The data collection methodology permits estimation of severity-specific injury rates, the focus of this presentation. One aspect of data quality assessment concerned the validity of the youth self-reports of injuries. For all unintentional injuries combined (U.S. data, from WISQARS), and for injuries classified as agriculture-related (national and/or state or regional data from 15 previous studies), plots of both types

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