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## E2.3

### Title: Hospitalization and Injury Fatality Rates Among New Jersey Youth Workers Ages 14 to 21

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**Background:** Injury at work is a public health concern, particularly among adolescent workers and young adults ages 14-21. Secondary school career-technical-vocational education (CTE) related injuries are mandated by law under jurisdiction of New Jersey (NJ) Department of Education to be reported to NJ Safe Schools Program (NJ SS) online reporting system, which is the only U.S. State law-based surveillance data for young workers. To date, reported injuries are generally less severe; cases of permanent disability or death are rare. NJ Department of Health's (NJDOH) hospitalization and injury fatality records provide additional information about other CTE and non-CTE related injuries not necessarily reported to NJ SS but captured due to required inpatient care. This report examined NJDOH hospitalization and fatality records, in comparison with NJ SS surveillance reports, on injury among young workers ages 14-21.

**Methods:** Details of NJ SS online injury surveillance for approved programs are cited elsewhere. Hospital discharge data (HDD) were used to obtain the annual number of work-related hospitalizations 2007-2016, for youths ages 14-21. Hospital discharge data were abstracted based on age, state of residency, calendar year, and Workers' Compensation as primary payer. To calculate the annual crude rate of hospitalizations per 100,000 employed persons, denominator data were obtained from the Bureau of Labor Statistics (BLS), Geographic Profile of Employment and Unemployment. Estimated hospitalization rates were stratified by demographic data available. Hospitalization rates for primary diagnoses and job title/ status with two or more documented cases were also reported. Fatality data for youth ages 14-21 were obtained from the NJDOH Occupational Health Surveillance Unit's Fatal Occupational Injuries Surveillance project. Annual crude fatality rates per 100,000 full time equivalent (FTE) workers, age 16 years and older, were estimated for 1990-2016 using annual average FTE workers age 16 years and older and NIOSH's Employed Labor Force Query System as denominator. Fatality rates were also estimated by various demographic data available, including industry and

occupation. U.S. BLS data query tool was used to help stratify data by age group. Analyses were carried out using Statistical Analysis Software, SAS (v.9.4, Cary, NC).

**Results/Discussion:** Annual crude hospitalization rates gradually decreased over time. Hospitalization and fatality rates were higher among young adult workers ages 19-21; non-Hispanic Whites (NHW); and males. The percent fatality for the 19-21 age group is over three times the combined percent fatality for ages 14-17 and 18. Racial disparity persists in injury distributions among youth workers with Black and NHW often bearing much of the injury burden. Higher rate of male injuries may suggest higher tendency for males to engage in more risky jobs than females or a reflection of the current gender distribution in the underlying population. Overall decline in hospitalizations rates corresponds to a decrease in reported injuries among CTE students in NJ as observed in the NJ SS annual injury report. Age distribution was slightly different between hospitalization rates and injuries reported to NJ SS. While people ages 19-21 had higher hospitalization rates, people  $\leq 17$  years of age had the most injury reports in NJ SS data. Calculated rates inherently vary based on differences in the denominator. NJ SS data are based on public secondary school CTE enrollment programs across NJ, while NJDOH data involve all youth workers in NJ, regardless of student/ CTE enrollment status. Estimated rates were not calculated. Understanding causes and mechanisms of injury creating the largest share of this burden, and understanding disparities among affected groups, can inform public health prevention efforts with collaboration among stakeholders involved in injury surveillance, treatment, education.

## E2.4

### Title: Workplace Violence Against Youth: Results from a National Telephone Survey

Authors: [Kimberly Rauscher](#), [Carri Casteel](#), [Doug Myers](#), [Corinne Peek-Asa](#), [Cassidy Branch](#)

**Background:** Surveillance data show that workers under the age of 25 have an increased risk of workplace violence compared to all workers combined. Given their predominant employment in the high-risk retail and service industries, the lack of violence prevention programs in these industries, and the fact that youth may be uniquely affected by workplace violence due to their ongoing physical and psychological develop-

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ment, young workers are a vulnerable population at risk. Despite these facts, young workers have received little research attention when it comes to workplace violence. Objectives: The main objective of the present study is to improve our understanding of young workers' experiences with workplace violence. Key outcomes investigated are as follows: 12-month victimization prevalence; the forms of violence (e.g., assault, verbal abuse) experienced in the past year; the perpetrator of these incidents, and injury-related outcomes.

**Methods:** Using preliminary data (n=512) from a national telephone survey targeted at 1000 young workers ages 14 to 24 across the United States, we calculated descriptive statistics to determine the following: 12-month victimization prevalence and the distribution of the forms of violence experience in the past year. These include: verbal abuse; threats; sexual harassment; sexual assault; and other physical assault. We also surveyed respondents about their most recent experience with being victimized in the last year to investigate, among other outcomes, the distribution of perpetrators and the frequency with which these events resulted in an injury.

**Results:** Preliminary findings show the twelve-month workplace violence victimization prevalence was 59% (n=302). Verbal abuse (52%) was the most common form of violence experienced by youth; followed by sexual harassment (22%); threats (16%); physical attacks (7%) and sexual assault (5%) (categories are not mutually exclusive). Social media was used in 21% of the incidents involving sexual harassment and in 11% of those involving threats made against young workers in the previous year. When asked to report on the most recent incident they experienced, 4% of victims reported having been injured. Among these most recent incidents of workplace violence, perpetrators included customers/ clients (54%), co-workers (35%), supervisors (18%), and romantic partners (2%) (categories are not mutually exclusive). In cases where supervisors or co-workers were the perpetrators, respondents were mostly likely to report they were victims of verbal abuse (64% and 43%, respectively) and sexual harassment (22% and 42%, respectively). Data collection is expected to be completed this summer.

**Discussion:** This first of its kind national study of workplace violence among youth demonstrates the problem of violence at work is much wider spread among youth than national surveillance data indicate. Given that only

4% of victims reported they were injured; this suggests that as many as 96% (assuming no non-reporting) of young victims of workplace violence could go undetected in occupational surveillance systems. This indicates that to adequately grasp the extent and nature of workplace violence among young workers, alternative methods are needed. The role of supervisors, who should be protecting young workers, warrants further examination given that they were responsible for nearly 1 in 5 incidents of workplace violence. Attention to the use of social media in the perpetration of sexual harassment and threats against young people should also be explored further.

## Session E3

### Title: Safety Climate: Application to High-Risk Work

Moderator: Douglas Myers

#### E3.1

### Title: Case Study: Two Fire Fighters Die and One Fire Fighter Injured When Struck at a Roadway Incident – NIOSH Fire Fighter Fatality Investigation and Prevention Program

Authors: [Karis Kline](#), [Murrey Loflin](#)

**Background:** Since inception in 1998, the National Institute for Occupational Safety and Health Fire Fighter Fatality Investigation and Prevention Program has been driven by 3 main objectives. To identify and define the characteristics of fire fighter line-of-duty deaths, and in turn recommend ways to prevent deaths and injuries are the program's driving forces. Using the information gathered from investigations, FFFIPP can then disseminate prevention strategies to the fire service. On March 15, 2017, an 80-year-old male volunteer deputy chief and a 53-year-old female volunteer fire fighter died and a 43-year-old volunteer fire fighter was injured while operating at an incident scene where a dump truck was tangled in downed telephone lines. The fire fighters were preparing to clear the incident when they were struck by a hit-and-run driver. Both the deputy chief and female fire fighter were pronounced dead at the incident scene from their injuries. The male fire fighter was transported to a local trauma center, treated, and released the next day. NIOSH received notification of these line-of-duty deaths (LODD) from the U.S. Fire Administration and a decision is made to investigate.

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