

to train and equip on-scene responders, and to coordinate responses to take advantage of the complementary skill sets of on-scene and EMS responders.

### 126 EMS RESPONSE TIME TO SPORTS INJURIES: A ROLE FOR ON-SCENE RESPONDERS

Viktor Bovbjerg, Sam Johnson, Marc Norcross. *Oregon State University*

10.1136/injuryprev-2020-savir.118

**Statement of Purpose** Emergency medical services (EMS) often respond to injuries sustained during team athletics and sports. The interval between injury and EMS arrival allows on-scene responders to provide immediate care.

**Methods/Approach** We identified EMS runs associated with team or group sports (ICD-10 activity code Y93.6x), to a school or an athletic field or facility, using National Emergency Medical Services Information System (NEMSIS) 2017 data. We calculated EMS response times to scene as the difference between dispatch time and on-scene time. Initial patient acuity was defined as 'green' (lower acuity), 'yellow' (emergent), 'red' (critical), or 'black' (deceased). We compared mean response time by patient acuity group.

**Results** Of 1107 EMS runs identified, initial acuity for the majority was green (764, 70.2%), with a substantial yellow group (302, 27.8%), and relatively few red cases (22, 2.0%); there were no on-scene fatalities. Response times did not differ significantly by acuity. Approximately one quarter (292, 27.0%) of EMS responses were within five minutes, with greater proportions in the 5–10 minute (472, 43.6%) and 10 + minute (319, 29.5%) range; all but 76 responses (7%) were greater than two minutes.

**Conclusions** In over 90% of EMS responses identified in the 2017 NEMSIS data involving response to a team sporting or athletic event, response time was greater than 2 minutes; approximately 75% were greater than 5 minutes. For every injury, but particularly for emergent and critical injuries, this represents an important interval during which patient assessment, stabilization, treatment, and packaging by on-scene responders could improve outcomes. Emergency action plans can formalize pre-EMS on-scene emergency response in athletic settings.

**Significance and Contributions to Injury and Violence Prevention Science** The presence of trained and equipped on-scene responders (e.g. athletic trainers, coaches) would enable effective initial care during the interval until EMS arrival, and improve patient outcomes.

### 132 CAN EXPOSURE TO FRAMED MESSAGES ABOUT SAFETY REDUCE RISK BEHAVIOURS BY SCHOOL-AGED CHILDREN?

Mackenzie Seasons, Emily Weinberger, Barbara Morrongiello. *University of Guelph, Ontario Canada*

10.1136/injuryprev-2020-savir.119

**Statement of Purpose** The current study aimed to determine whether delivering framed safety messages (gain-framed, loss-framed, and no frame) in poster format reduced physical risk-taking behaviours when children were in a positive mood.

Previous research has shown that when in an elevated positive mood state, children engage in more risk behaviours than when in a neutral mood state, which leads to greater risk of injury (Morrongiello *et al.*, 2014). Research in this area is particularly important for school-aged children, who are becoming increasingly independent and more vulnerable to injury outside of the home (Morrongiello *et al.*, 2013).

**Method/Approach** 28 children (7–9 years old) were exposed to a message (gain-frame, loss-frame, or no frame (control) message) regarding play behaviours on a specific risk-taking measure (an obstacle course). Children's risk-taking was measured before and after a positive mood has been induced, and the impact of framed safety messaging on risk-taking behaviours was examined.

**Results** Results indicated the positive mood induction was successful and led to increased risk taking when participants were in a positive mood. Both gain- and loss- framed messages differentially counteracted this mood effect and led to reduced risk taking, but the loss-framed message reduced risky behaviours to a level significantly lower than the participants' baseline risk-taking behaviours.

**Conclusions** Results demonstrate that even in a positive mood, children can be influenced to engage in safer play behaviours with the use of message framing (particularly loss-framed messaging).

**Significance and Contributions to Injury and Violence Prevention Science** Given that physical risk taking was mitigated by framed safety posters (particularly loss-framed posters) even when children were in a positive mood, framed posters may be a cost-effective and useful intervention in places like public parks, where children are often happy and inclined to engage in increased risk-taking.

### 137 A META-ANALYSIS ASSESSING THE OUTCOME OF OCCUPATIONAL INJURY BY MINORITY EMPLOYEE RACE

Chelsea Hicks, Niclette Kibibi, William Thomson. *University of Iowa College of Public Health*

10.1136/injuryprev-2020-savir.120

**Statement of Purpose** Literature suggests that racial disparities in the prevalence of occupational injury exist, but the magnitude of these disparities has not been summarized or well-described. The purpose of this meta-analysis was to examine differences of experienced workplace injury between White and Black employees.

**Methods** Our study population of interest was employees, teens to adults, who identified as non-Hispanic Black or non-Hispanic white, and who experienced an unintentional injury in the workplace. PubMed and Embase were searched, which resulted in a total of 488 published articles. Articles were identified and reviewed using search terms related to workplace injuries and racial ethnic disparities. Standard meta-analysis tools were used to rate the quality of the studies and data combined using generic inverse variance pooling. Random effects models were used to account for the heterogeneity between the studies.

**Results** A total of 5 articles met eligibility criteria and included workplace injury information from both national databases and smaller assessments. Publication dates ranged from 2003 to 2017 with cross sectional and cohort studies present. When assessing the outcome of injury for those who are a racial/ethnic minority, individuals who were African American were

almost 2 times more likely to experience occupational injury than the White comparison group (pooled RR: 1.79, 95% CI 1.65 to 1.93).

**Conclusions** Differences in race increase the risk of experiencing workplace injuries. The causes of these discrepancies could vary greatly by occupation type. Future studies should summarize injury rates by occupation to allow for understanding of risks minority employees face.

**Significance and Contributions to Injury and Violence Prevention Science** It is important to understand the risks associated with injuries within the workplace that are making occupational environments less safe for minority workers. Understanding these risks allow for the development of innovative preventative methods to ensure all workers safe working environments.

138

#### EXAMINATION OF THE IMPACT OF RECURRENT OVERDOSE AND MEDICATION-ASSISTED TREATMENT ON AFFECTING MORTALITY AMONG WEST VIRGINIA MEDICAID BENEFICIARIES

Zheng Dai. *West Virginia University*

10.1136/injuryprev-2020-savir.121

**Statement of Purpose** The study aims to explore the trend of survival rates associated with recurrent overdose, and evaluate the effectiveness of MAT among the West Virginia (WV) Medicaid population.

**Methods** The primary outcome events include recurrent overdose and death. The occurrence of first nonfatal overdose was identified and an overdose cohort was then determined to allow 12 months of observation after the event. Kaplan–Meier method and log-rank test were used to assess the difference of time-to-events between subgroups.

**Results** A total of 446565 (87%) continuously enrolled WV Medicaid beneficiaries from 2014 to 2016 were analyzed in the study. The overdose cohort included 2081 subjects, and 261 (12.5%) subjects experienced recurrent overdose. Only 483 subjects received MAT other than methadone, and approximately 29% (N=139) of them initiated MAT after the index overdose. People who experienced a recurrent overdose in the 12 month follow the index overdose had a rapidly decreased survival rates, compared with those who did not ( $p=0.0123$ ). For subjects who received any MAT and those who had longer duration receiving MAT were both significantly associated with a higher survival rates ( $p=0.0398$  and  $0.0458$ ). Surprisingly, people who received any MAT were associate with a non-significantly higher incidence rates of recurrent overdose. This situation was further compounded by the observation that an early initiation of MAT after the index overdose was associated with a non-significantly lower survival rates.

**Conclusion** Recurrent nonfatal overdose increases mortality risk. Although MAT has been proven to be effective in preventing death, many subjects received MAT too late to be saved from another overdose event.

**Significance** Findings from this study will provide compelling evidence to inform MAT expansion and policy reform efforts in West Virginia to timely deliver MAT to fulfill patients' urgent needs.

153

#### THE RELATIONSHIP OF SELF-REPORTED RESILIENCE AND TRAUMATIC CALL EXPOSURE AMONG PATROL OFFICERS AT THE DALLAS POLICE DEPARTMENT

Alaina Beauchamp. *University of Texas Health Science Center at Houston School of Public Health*

10.1136/injuryprev-2020-savir.122

To characterize law enforcement officer (LEO) resilience to physiological and psychological stress and describe the impact of cumulative traumatic exposure on resilience.

Patrol officers at five of the Dallas Police Department divisions volunteered to participate in 1.5 hour semi-structured focus groups. Focus groups (n=18 LEO) assessed experiences with traumatic calls and cumulative stress over the course of a shift. Transcripts were thematically analyzed in an iterative deductive/inductive coding scheme to identify anticipated and emergent findings.

The majority of participants were male and ages ranged from 23 to 61 years (mean=38 years). Participants were 67% non-Hispanic white and 56% had a four-year college degree. Officer resilience emerged in many forms, including officer-nominated local innovations and immediate and distal coping mechanisms. Resilience to traumatic calls over time was significantly influenced by tenure. For experienced LEOs (>10 years of service), a reduction in adrenaline reaction was recognized for high-stress calls similar to past encounters. Participants describe a peak of perceived adrenaline rush, which they subsequently become resilient to reaching during similar circumstances.

The frequency at which LEO respond to high-stress calls was described as a method of instinctively building resilience to situational stress reactions. This suggests that previous LEO experiences could have an integral part in influencing the physiology and psychology of LEO stress reactions on the job. The themes gathered serve to inform future areas of the study, as well as a predictive algorithm that can build in time between high stress calls to improve LEO occupational health and safety.

LEO experience stressful calls for service on a daily basis, which may cumulatively compound placing the LEO and civilians at risk of unintended consequences, like PTSD, injury, or mortality. To our knowledge, the degree of occupational stress resilience among LEO has not been considered for intervention in the cumulative stress pathway.

155

#### SOCIODEMOGRAPHIC CHARACTERISTICS AND ENVIRONMENTAL FEATURES OF MASS-SHOOTING LOCATIONS IN TEN US CITIES

Sharmaine Ross, Steven Forman, Christopher Morrison, Sara F Jacoby, Beidi Dong, Zoë Maher, Jessica H Beard. *Lewis Katz School of Medicine at Temple University; Department of Epidemiology, Columbia University; School of Nursing, University of Pennsylvania; George Mason University*

10.1136/injuryprev-2020-savir.123

**Statement of Purpose** Mass-shootings involving  $\geq 4$  people injured or killed occur frequently in cities in the United States. However, little is known about the places affected by mass-shootings. We aimed to describe the sociodemographic