

## Alcohol and substance abuse

### 0028 METHAMPHETAMINE EXPOSURES REPORTED TO UNITED STATES POISON CONTROL CENTERS, 2000–2019

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10.1136/injuryprev-2021-SAVIR.14

**Statement of purpose** To investigate characteristics and trends of methamphetamine exposures reported to United States (US) poison control centers.

**Methods/Approach** Data from the National Poison Data System were analyzed to investigate exposures to methamphetamine.

**Results** From January 1, 2000 through December 31, 2019, US poison control centers managed 54,199 cases involving methamphetamine as the first-ranked substance. Adults 20–39 years old accounted for more than half (56.3%) of all cases. There were 1,291 deaths, of which 43.0% involved multiple-substance exposures. Among multiple-substance exposures in which methamphetamine was the first-ranked substance, stimulants and street drugs (excluding methamphetamine) were most commonly present (22.7%), followed by opioids (19.0%). The substance class associated with the most fatalities was opioids (n=243, 26.6%). The rate of methamphetamine exposures per 100,000 US population increased by 79.5% from 2000–2005, then decreased by 68.0% from 2005–2007, followed by an increase of 614.6% from 2007–2019. From 2007–2019, the rate significantly increased among all age groups, except among 6–12-year-olds, and in all US regions. The rates of single- substance and multiple-substance exposures increased significantly from 2007–2019 by 456.7% (p<0.0001) and 843.6% (p<0.0001), respectively. From 2007–2019, the proportions of cases resulting in admission to a health care facility and serious medical outcome increased by 38.6% and 55.2%, respectively, and the fatality rate increased by 492.3%.

**Conclusions** The rate of exposure to methamphetamine in the US declined initially following passage of the Combat Methamphetamine Epidemic Act of 2005. However, since 2007, the rate and severity of methamphetamine exposures in the US have increased.

**Significance** This is the first study to analyze methamphetamine exposures among all age groups over an extensive time period in the US. The findings from this study can help inform future prevention, monitoring, and research efforts.

## Suicide prevention

### 0030 ASSESSING SUICIDE MECHANISMS BY GEOGRAPHIC DIVISION, URBANIZATION, SEX, RACE/ETHNICITY, AND AGE – UNITED STATES 2004–2018

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10.1136/injuryprev-2021-SAVIR.15

**Statement of purpose** We assessed suicide rates by mechanism within geographic divisions by urbanicity, age, race/ethnicity and sex to inform targeted approaches for suicide prevention strategies. We addressed health equity by highlighting potential disparities and differences between and within demographics, geographic divisions and urbanization levels.

**Methods/Approach** We will conduct temporal trend analysis using population-based mortality data from the National Vital Statistics System between 2004 and 2018 to estimate trends in suicide rates. We will tabulate national annual counts of suicide deaths among U.S. residents, by injury mechanism, stratified by Census Divisions, 2013 NCHS urban-rural classification scheme for counties, age, race/ethnicity, and sex.

**Results** In preliminary analysis using CDC WONDER we found certain mechanisms of suicide increasing. We found females had statistically significant higher crude rates of suicide by suffocation than by firearm in large central metro areas in New England (1.3; 0.3) and Middle Atlantic (1.2; 0.3) and in large fringe metro areas in New England (1.6; 0.4) and Middle Atlantic (1.3; 0.6). Males had statistically significant higher crude rates of suicide by suffocation than by firearm in large central metro areas in New England (6.0; 3.7) and Middle Atlantic (4.2;3.5) and in large fringe metro areas in New England (6.4; 4.3). Suicide rates by firearm are highest in most other geographic and urbanization areas for sex. Further analyses will highlight trends in suicide rates by mechanism and by sex, age, race/ethnicity within geographic areas and urbanicity to elucidate differences between and within demographic groups.

**Conclusions** Results may inform suicide prevention strategies for different populations based on overlapping demographics, geographic areas and urbanicity.

**Significance** Using a health equity lens, we will provide nuanced suicide data needed for a multifaceted approach to inform suicide prevention strategies in the US.

## Alcohol and substance abuse

### 0031 RIDESHARING TRIPS AND ALCOHOL-INVOLVED MOTOR VEHICLE CRASHES

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10.1136/injuryprev-2021-SAVIR.16

**Statement of purpose** Rideshare companies such as Uber and Lyft have facilitated over 20 billion trips worldwide since the technology launched in 2010. Ridesharing could theoretically reduce alcohol-involved motor vehicle crashes by replacing drunk driver trips.

**Methods/Approach** This case control study used highly spatially and temporally resolved trip-level rideshare data and motor vehicle crash data for Chicago from November 2018 to December 2019. The units of analysis were motor vehicle crashes in the city of Chicago. Cases were crashes that police indicated were alcohol-involved. Controls were crashes in the same census tract, matched 1:1. The exposure of interest was the density per square mile of rideshare trips that were in progress at the time of the crash, calculated using a kernel density function around active trip route lines. Control variables were taxi trip density, time of day, day of week, public holiday, temperature, precipitation, and month. A conditional

logistic regression compared alcohol-involvement to rideshare trip density.

**Results** There were 962 alcohol-involved motor vehicle crashes and 118,913,157 rideshare trips during the fourteen-month study period. Rideshare trip density was 69.0 per square mile at the location of case crashes and 105.7 per square mile at the location of control crashes. After controlling for covariates, the conditional logistic regression model identified that an increase of 1 rideshare trip per square mile at the crash site was associated with 0.2% decreased odds that the crash was alcohol involved (OR = 0.998; 95%CI: 0.996, 0.999). There was no association for taxi trips.

**Conclusions** Increased ridesharing activity was associated with decreased risks that motor vehicle crashes were alcohol involved.

**Significance** Over 10,000 people die in alcohol involved motor-vehicle crashes annually. Rideshare trips may replace drunk driver trips, thereby reducing the considerable injury burden due to alcohol-involved crashes.

## Health communication

### 0033 USING SOCIAL MEDIA TO DISSEMINATE INJURY PREVENTION CONTENT: IS A PICTURE WORTH A THOUSAND WORDS?

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10.1136/injuryprev-2021-SAVIR.17

**Statement of purpose** Social media (SM) is ubiquitous and offers an opportunity to disseminate reliable and accurate safety recommendations to parents who are frequent social media users, yet little is known about the reach and impact of these messages on safety knowledge and behavior adoption.

**Methods/Approach** Parents of children (<7 years) were recruited from a nationally representative online survey panel to complete a survey assessing their Internet and SM usage, eHealth literacy level, and to gather their reactions to SM posts on three safety topics (safe sleep, bike safety, and poison prevention). Two social posts contained a photo that did not match recommended safety behaviors in the text (safe sleep and poison prevention), and one post contained a photo that did match with the recommended safety behavior (bike safety). The eHealth Literacy Scale (eHEALS) was used to measure the parent's eHealth literacy; low eHealth literacy was defined as eHEALS score <26.

**Results** A total of 580 parents completed the survey. Most were female (58.6%) with high eHealth literacy (84.5%). Low eHealth literate parents used SM more frequently than high eHealth literate parents for safety information ( $p < .0001$ ). Compared to low eHealth literate parents, a larger proportion of high eHealth literate parents correctly identified the mismatched posts (safe sleep:  $p = .0081$ ; poison prevention:  $p = .0052$ ). A larger proportion of high eHealth literate parents correctly identified the matched post for bike safety ( $p = .7022$ ).

**Conclusion** Injury professionals can use SM to create and share reliable and accurate injury prevention information

to large, global audiences. Using matching imagery and text helps to facilitate parental understanding of safety recommendations, regardless of eHealth literacy level of the audience. Identifying gaps in the content of SM messaging and parental understanding of messages will allow injury professionals to create and disseminate safety information to more effectively facilitate parental understanding of recommendations.

## Health communication

### 0034 USING CONTENT ANALYSIS AND EYE-TRACKING TO UNDERSTAND INJURY PREVENTION CONTENT DISSEMINATION ON SOCIAL MEDIA

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10.1136/injuryprev-2021-SAVIR.18

**Statement of purpose** We will provide information on two study branches: content analysis, showing the frequency and content of injury prevention social posts from key disseminating organizations, and eye tracking experiment, examining the textual and pictorial factors of social posts that influence visual attention and safety behaviors among parents of young children.

**Methods/Approach** First, we conducted a quantitative content analysis (May 2018-April 2019) of Instagram posts from 22 key pediatric injury organizations. Next, parents ( $n = 150$ ) of young children (<7 years) completed an eye-tracking experiment, where they were exposed to six posts, three with imagery that matched the textual information explaining the recommended safety information (concordant) and three with imagery that did not (discordant). We examined the proportion of dwell time spent on textual and pictorial areas. We applied generalized estimating equation regressions to examine the relationship between concordant imagery and visual attention, accounting for frequency of social use and health literacy (Newest Vital Sign).

**Results** A total of 4,598 posts were analyzed, of which 754 had a pediatric injury focus. Pediatric injury content was posted in 54% of posts from pediatric injury organizations. More posts had images than videos, but videos were more likely to show safety recommendations. Participants spent an average of 5.3 seconds on the concordant image posts compared to 3.3 seconds on the discordant image posts ( $p < 0.001$ ). Each second of viewing time on concordant posts was associated with a 2.8% increase in safety information knowledge ( $p < 0.001$ ).

**Conclusion** Visual attention to posts with recommended safety behaviors attracted significantly higher visual attention and resulted in an increased recognition/identification of the optimal safety actions.

**Significance** Identifying gaps in social media messaging and understanding how parents view these messages allows us to provide recommendations for injury prevention organizations to more effectively design and disseminate child injury prevention messages to local and global audiences.