CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY

Name(s)

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Project Number

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Project Title

Motor Vehicle Driver Injury and Death in Orange County: Who Is Most at Risk?

Abstract

Objectives/Goals

Describe motor vehicle traffic accident (MVTA) driver injury and death using emergency department (ED), hospitalization, and death data from 2014 in Orange County, California. Determine who is most likely to be injured or killed, analyze the data in terms of the drivers' age, gender, race/ethnicity, and where they live.

Methods/Materials

Data for this report were obtained from the Office of Statewide Planning and Development (OSHPD), which collects patient-level data from all health care facilities in California. The 2014 Emergency Department (ED) and Patient Discharge (PD) hospitalization datasets for Orange County residents were used for this report, which was accessed at the Orange County Health Care Agency internship program. Data were analyzed using SPSS statistical software and other variables included victim#s age, gender, race/ethnicity and their city of residence. Significant differences were determined by calculating 95% confidence intervals for rates. The first section of the report covers ED cases, followed by hospitalizations, and concluding with motor vehicle-related deaths.

Results

The results of this study confirm the stated hypotheses. Younger drivers 20-24 years of age in Orange County are more likely to be injured and killed in motor vehicle traffic accidents compared to older, more experienced drivers. While female drivers more likely to be injured while driving a motor vehicle (car/truck) compared to males, they were eight times less likely to be killed. Despite only accounting for 12% of ED visits, motorcycle drivers (all male) made up over half (51.8%) of all driver deaths.

Conclusions/Discussion

With nearly 10,000 OC drivers injured in 2014 alone, the results clearly show that motor vehicle collisions have a significant personal and economic cost. Based on these findings, it is estimated that over $120 million in medical costs were spent to treat these drivers# injuries in the ED and/or hospital in Orange County. While most injuries were relatively minor, a substantial number were more serious such as spinal fractures and head injuries that could result in a lifetime of disability. While these data do not say who was at fault, those who are young, male, and/or drive motorcycles are most at risk. These findings can help inform public health education efforts to reduce such unnecessary injury and death, and help improve motor vehicle safety.

Summary Statement

Data analysis of the demographics of drivers being injured or killed on the roads of Orange County.

Help Received

I received access to hospital data by working as an intern at the Orange County Health Care Agency.

Preliminary