

## Drug Presence in Fatal Motor Vehicle Collisions, California, 2005 - 2014

Drugged driving is an increasing public health and traffic safety concern. The 2014 National Survey on Drug Use and Health found that illicit drug use has increased since 2002, propelled primarily by marijuana and nonmedical use of prescription pain relievers.<sup>a</sup> In California, deaths, hospitalizations, and emergency department visits due to drug poisoning injuries have also increased from 2006-2013.<sup>b</sup> The 2013-2014 National Roadside Survey of Alcohol and Drug Use by Drivers found that drinking and driving is decreasing, but drugged driving is rising.<sup>c</sup> The 2012 California Roadside Survey of Nighttime Weekend Drivers' Alcohol and Drug Use found that the estimate of drug use among drivers was almost double the estimate of alcohol use.<sup>d</sup> Compared to data focused on alcohol involved driving, less is known or available about drugged driving. This fact sheet describes drivers involved in fatal motor vehicle collisions who tested positive for drugs in California from 2005-2014 using National Highway Traffic Safety Administration Fatal Analysis Reporting System (FARS) data.<sup>e</sup> Drug involved collisions are defined as collisions in which at least one driver tested positive for the presence of at least one of the following drug types: cannabis, stimulants, opioids, sedatives, and other drugs (hallucinogens, inhalants, and other drugs). However not all drivers in fatal collisions are tested. Drug involvement indicates a drug was present in a person's system, but does not necessarily indicate that the person was impaired by the drug.

In California, 30,796 fatal motor vehicle collisions resulting in 33,775 fatalities occurred in 2005-2014. Drugs were involved in 19% (5,734) of these fatal collisions and alcohol was involved (i.e., blood alcohol content (BAC)  $\geq$  0.01g/dL) in 27% (8,348). Figure 1 shows the proportion of fatal alcohol involved and drug involved collisions increased from 2005 to 2009. However, while alcohol involved collisions decreased from 2009 to 2014, drug involved collisions continued to increase steadily, with an increase from 18% in 2009 to 21% in 2014.\*

### Drug Involved Collisions

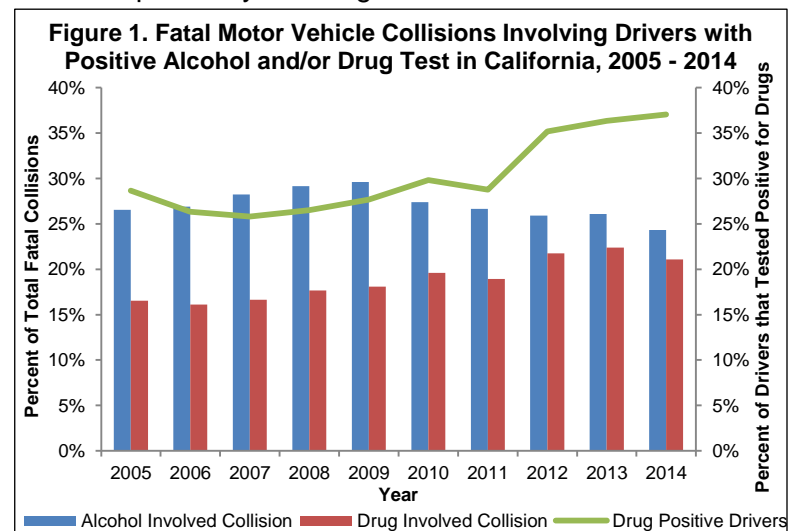
From 2005 to 2014, there were 5,734 drug involved collisions resulting in 6,509 fatalities. Fatal drug involved collisions were more likely than fatal non-drug involved collisions to occur in a rural area,\*\* be a head-on collision,\*\* involve speeding,\*\* involve more than one vehicle,\*\* and involve a motorcycle.\*\*

### Drug Testing of Drivers

In 2005-2014, 19,543 drivers (43% of all drivers involved in a fatal collision) were tested for drugs by blood, urine, or other test. At least one drug type (listed above) was found in 5,821 drivers (30% of those tested) involved in 5,734 fatal collisions. As shown with drug involved collisions in Figure 1, the percent of drug positive drivers among those who were tested has increased steadily since 2007 from 26% to 37% in 2014.\*\*

### Drug Positive Drivers

Drivers who tested positive for at least one drug were mostly male (80%) with a mean age of 37 years, 45% tested positive for two or more drugs, and 40% also had a positive BAC (BAC  $\geq$  0.01 g/dL). The age groups with the most drug positive drivers were the 45-64 years age group with 1,478 (25% of all drug positive drivers) and the 25-34 years age group with 1,401 (24%) drug positive drivers.



<sup>a</sup> Center for Behavioral Health Statistics and Quality (2015). *Behavioral health trends in the United States: Results from the 2014 National Survey on Drug Use and Health* (HHS Publication No. SMA 15-4927, NSDUH Series H-50). Retrieved from <http://www.samhsa.gov/data/>

<sup>b</sup> EpiCenter California Injury Data Online <http://epicenter.cdph.ca.gov/>

<sup>c</sup> Berning, A., Compton, R., Wochinger, K. (2015, February). *Results of the 2013-2014 National Roadside Survey of alcohol and drug use by drivers* (Traffic Safety Facts Research Note. Report No. DOT HS 812 118). Washington, DC: National Highway Traffic Safety Administration

<sup>d</sup> Lacey, J.H., Kelley-Baker, T., Romano, E., Brainard, K., Ramirez, A. (2012, November). *Results of the 2012 California Roadside Survey of Nighttime Weekend Drivers' Alcohol and Drug Use*. Pacific Institute for Research and Evaluation. Calverton, MD.

<sup>e</sup> National Highway Traffic Safety Administration Fatal Analysis Reporting System <http://www.nhtsa.gov/FARS>

### Drugs Detected in Drug Positive Drivers

Among drug positive drivers, cannabis was the most common drug type detected (45%), followed by stimulants (39%), opioids (16%), and sedatives (13%). Figure 2 shows there was a 36% increase over the ten year period in the presence of cannabis among drug positive drivers, from 37% to 50%,\*\* and a 39% decrease in the presence of stimulants from 54% to 33%.\*\*

Characteristics of drug positive drivers varied by drug type (Table 1). Among the cannabis positive drivers, 87% were male and 67% were under the age of 35 years. In contrast, among those that tested positive for an opioid or sedative, there were more females (29% and 26%, respectively), and a higher mean age with 67% of opioid positive and 66% of sedative positive drivers aged 35 years and older.

Nearly half (45%) of drug positive drivers tested positive for more than one drug. Poly-drug use (not including alcohol) was highest among those positive for a sedative (76%) or a stimulant (72%), and lowest among those positive for cannabis (32%). About half (52%) of drug positive drivers aged 35 and older tested positive for two or more drugs. Alcohol was detected most among cannabis positive drivers (46%), and least among opioid positive drivers (29%).

### Limitations

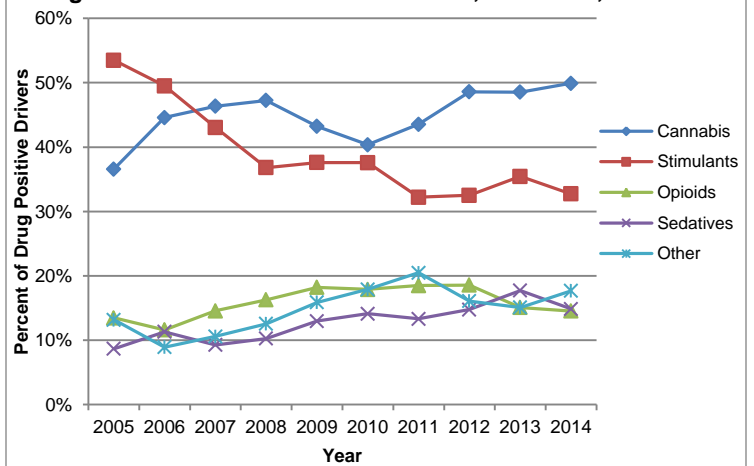
FARS data should be interpreted with caution for several reasons. Less than half of drivers involved in fatal collisions were tested for drugs, therefore the results cannot be generalized for all drivers in fatal collisions. There is no information about the time between the collision and drug testing, degree of impairment, or concentration of substances present, therefore presence of a drug does not necessarily indicate impairment. In addition, drug testing protocols and the likelihood of testing for specific drugs may have changed over the time period. Finally, causality between drugs and involvement in a fatal collision cannot be established based on the data provided.

### Conclusion

California's increasing trend in drug presence among drivers of fatal collisions is consistent with the national trend. This fact sheet provides an in-depth look at California-specific FARS data, allowing us to look at crash and driver characteristics, including information on the specific drugs involved in fatal collisions. Both the percent of total fatal collisions that were drug involved and, among those tested for drugs, the percent of drug positive drivers involved in fatal collisions significantly increased over the ten year period 2005-2014. In 2014, one in three drivers who were tested for drugs had tested positive for at least one drug, with cannabis being the most frequent drug identified. These California-specific FARS data show higher rates of drug presence among drivers in fatal collisions compared to results of roadside surveys and self-reported drug use while driving, suggesting that drug presence may be a risk factor in fatal collisions. The growing public health and traffic safety concerns regarding increased drug presence among drivers warrants further action and studies focused on drugs and their effects on driving impairment, strengthened methodologies for drug testing, and prevention and intervention programs.

Statistically significant at p-value<0.05,\* p-value<0.001\*\*

**Figure 2. Drugs Detected among Drivers Testing Positive for Drugs in Fatal Motor Vehicle Collisions, California, 2005-2014**



**Table 1. Characteristics of Drivers Involved in Fatal Motor Vehicle Collisions who Tested Positive for at least One Drug by Drug Type, California, 2005-2014**

Driver Characteristics	Any Drug (n=5,821)	Cannabis (n=2,618)	Stimulants (n=2,293)	Opioids (n=915)	Sedatives (n=740)	Other <sup>€</sup> (n=853)
Sex						
Male	80%	87%	81%	71%	74%	71%
Female	20%	13%	19%	29%	26%	29%
Mean Age (years)	36.8	31.5	35.9	44.5	43.4	43.8
Injury Outcome						
Fatal	80%	77%	81%	76%	76%	85%
Non-fatal injury	14%	16%	13%	17%	19%	10%
No injury	6%	7%	6%	6%	5%	5%
Drugs Detected						
One	55%	68%	28%	30%	24%	39%
Two	25%	12%	44%	26%	24%	25%
Three	20%	19%	28%	44%	52%	36%
Positive BAC	40%	46%	39%	29%	31%	36%

€ Other includes presence of Hallucinogens, Inhalants, and Other Drugs

**Funding for the Crash Medical Outcomes Data (CMOD) Project is provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.**

Crash Medical Outcomes Data Project: <http://www.cdph.ca.gov/programs/Pages/CrashMedicalOutcomesDataProject.aspx>  
 Crash Medical Outcomes Data Project Online Data Query: <http://epicenter.cdph.ca.gov/ReportMenus/CrashMedicalOutcomesTable.aspx>

