

Not just the booze: Polysubstance use among fatally injured drivers

Peter Palamara

Curtin-Monash Accident Research Centre, Curtin University

Abstract

Alcohol is regarded as a significant cause of driver impairment. In more recent years however, concern has been growing over the use and abuse of illicit substances and prescription pharmaceuticals that can impair driving performance. The analysis of the toxicology records of N=1,375 drivers fatally injured in Western Australia 2000-2012 showed that over six in ten tested positive for either alcohol, illicit drugs and various pharmaceuticals alone or in combination. The identification of the presence of multiple, potentially impairing substances highlights the need to review current policies and practices in relation to the enforcement and management of substance impaired driving.

Background

Substance impaired driving is a dynamic road safety issue. Changes in the availability and pattern of use of potentially impairing substances, illegal or otherwise, requires regulators to continually monitor and counter an evolving landscape of impaired driving. Alcohol is foremost among the substances that can impair driving (Peck, Gebers, Voas, & Romano, 2008), followed by a number of highly prevalent illicit substances such as cannabis and methamphetamine (OECD, 2010; Palamara, Broughton, & Chambers, 2014). Certain 'legal' pharmaceuticals such as benzodiazepines are also associated with crash involvement (Meuleners et al., 2011) though these are more difficult to monitor and counter. This paper will report on the incidence over time of the above three groups of potentially impairing substances and the major characteristics of their presentation and co-use among drivers fatally injured on WA roads 2000-2012. Because of the known increased risk of impairment associated with the use of multiple substances, the paper will conclude with recommendations for regulators to be more vigilant of and responsive to the potential use and abuse of multiple substances by drivers.

Method

WA Police crash records of drivers and motorcycle riders fatally injured on WA roads 2000-2012 were linked with WA ChemCentre toxicology records to identify the presence and nature of illicit and non-illicit drugs and alcohol among drivers/riders. A total of N=1,375 linked records were extracted for analysis. For this paper each fatality was categorised in relation to the presence of alcohol (≥ 0.001 gm%); the presence of one or more illicit substances (e.g., THC, methamphetamine, MDMA/Ecstasy), and the presence of legal pharmaceuticals (e.g., benzodiazepines). Univariate analyses were undertaken to describe the characteristics of the substance groups, their co-detection and their distribution over time (as a rate per 100,000 registered drivers).

Summary Results

Across the study period one or more substances were detected in around six in ten drivers. Alcohol (≥ 0.001 gm%) was the most commonly detected substance (38.3% of fatally injured drivers) followed by legal pharmaceuticals such as opioids and benzodiazepines (23.8%) and illicit substances such as THC and methamphetamine (22.7%). The annual rate of fatally injured drivers testing positive for these substance groups was found not to have significantly changed over the period, though there is some evidence of a decline in the annual rate for each substance group post 2007 coinciding with the introduction of roadside oral fluid testing in WA (see Figure 1).

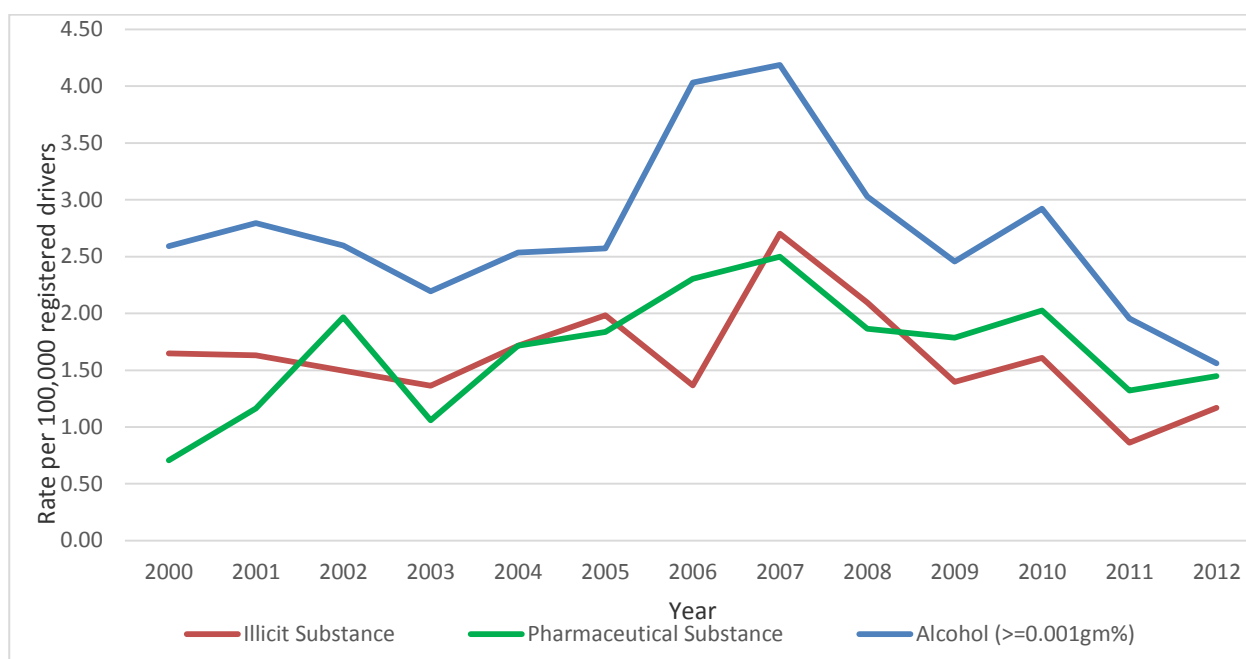


Figure 1: Annual rate of detection of illicit substances, pharmaceutical substances and alcohol ($\geq 0.001\text{gm}\%$) in fatally injured drivers; Western Australia 2000-2012

Around a third of the $n=863$ fatally injured drivers who tested positive were found to be positive for *alcohol only*, with another third testing positive for two or more groups of substances (see Table 1). The most common substance combinations were (i) alcohol and one or more illicit substances (mostly THC) and (ii) alcohol and one or more pharmaceuticals (mostly opioids, benzodiazepines and anti-depressants).

Table 1. Detection of substances in fatally injured drivers; Western Australia 2000-2012

Substance Group	N drivers	%
Nil – no substances detected	512	37.2
Alcohol (BAC $\geq 0.001\text{gm}\%$) only	302	22.0
Pharmaceuticals only	180	13.1
Illicit substances only	106	7.7
Alcohol + Pharmaceuticals	69	5.1
Alcohol + Illicit substances	128	9.3
Illicit substances + Pharmaceuticals	50	3.6
Illicit substances + Alcohol + Pharmaceuticals	28	2.0
Total	1,375	100

Conclusions

This study shows that alcohol continues to present as the most common substance related risk factor for impairment among fatally injured drivers. For many of these drivers, any impairment associated with alcohol may have been exacerbated by the identified co-use of illicit and legal pharmaceuticals such as THC, methamphetamine, benzodiazepines and opioids that are also known to impair driving performance. The increased risk of impairment associated with the combined use of alcohol and other impairing substances has been acknowledged in Victoria with the newly introduced combined drug and alcohol offence. This development should similarly be adopted elsewhere in Australia and

thought given to how the policy might be extended to include other commonly prescribed and potentially impairing pharmaceuticals such as benzodiazepines.

References

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