Why isn’t the Involvement of Alcohol in Road Crashes in Australia Lower?

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Abstract
Australia has been considered to be a leader in drink driving enforcement and education. The maximum permissible legal blood alcohol level is 0.05% for fully-licensed drivers, with lower levels for novice drivers and commercial drivers. There have been very high levels of random breath testing in most jurisdictions for more than a decade; with the enforcement activity directly supported by intense, sustained mass media public education. Periodic surveys reveal that drink-driving is considered unacceptable by almost all drivers. When the package of regulatory, enforcement and educational measures was implemented in the mid to late 1980s, the results were a dramatic halving of the percentage of killed drivers and riders with a BAC of 0.05% or greater (from around 50% to around 20 to 25%) over some three years. However, despite sustained enforcement and public education, the involvement of alcohol in road crashes in Australia has not fallen further in the last decade. Overall, the percentage has fluctuated between 20% and 30% between 1992 and 2000. This paper examines a number of potential contributors to the unacceptably high level of involvement of alcohol in road crashes in Australia and discusses their relative importance and the extent to which they are amenable to change.

Introduction
Australia has long been considered to be a leader in drink driving enforcement and public education. In each State and Territory, the maximum permissible legal blood alcohol level is 0.05% for fully-licensed drivers. In earlier years, the maximum permissible legal blood alcohol level was 0.08% (except in Victoria), but this was reduced to 0.05% in most States by the early 1980s. The last jurisdictions to introduce the 0.05% limit were South Australia in 1991 and the Northern Territory in 1994. Lower BAC limits for novice drivers and commercial drivers were introduced in Victoria in 1984 and in NSW in 1985 and are now widespread.

Random Breath Testing (RBT) legislation was first introduced in Victoria in 1976, but enforcement was low and did not reach what later research showed to be an intensity threshold for crash reduction effects to occur.[1] The first intense application – where approximately one in three licensed drivers were tested within the first year - was in New South Wales in 1982. By the end of 1988, RBT was the principal form of enforcement in all Australian States and Territories. The package of regulatory, enforcement and educational measures had dramatic results. The introduction of RBT in NSW brought about an immediate reduction in drink driving crashes of about 25%.[2] In Victoria, the percentage of killed drivers and riders with a BAC of 0.05% or greater was more than halved from the 1977 figure of 49% to 21% in 1992.[3] In a paper prepared as part of the input to the development of the National Road Safety Strategy, Vulcan and Corben[4] estimated that, in the long term, it would be reasonable to expect continuing reductions in drink-driving to a level where only 1-2% of drivers (mainly hard core offenders) would drink excessively then drive, resulting in about 15% of drivers killed having a BAC above 0.05%.
Not only has this level not been achieved but there have been no further gains since the initial step reductions.

This paper begins with a description of trends in drink driving crashes in Australia as a whole as well as in specific jurisdictions. It then identifies and discusses potential contributors to drink driving and trends in drink driving, including alcohol consumption patterns, factors associated with rural and remote areas and road and vehicle characteristics. The extent to which the decade long stability in the percentage of crashes which are attributed to drink driving may reflect changes in other factors that lead to serious injury crashes is then discussed. One of these issues is failure to wear seat belts by drink drivers resulting in their being unable to benefit from improvements in vehicle crashworthiness to the same extent as sober drivers. Another issue is the extent to which the Australian emphasis on drink driving detection and sanctions has contributed to alcohol-affected pedestrian fatalities or, at least, the failure to deter drink-walking.

Police have expressed concern that those drivers who have not been deterred from drink driving, despite many years of enforcement and education effort, may be an intractable remnant. It may be that some of the remaining drink drivers (not necessarily recidivists) exhibit a wide variety of socially unacceptable behaviours and road safety measures may not be the most effective ways of bringing about reductions in drink driving by these groups. This hypothesis is also explored.

Trends in Drink Driving Crashes in Australia

Figure 1 shows that the absolute number of drivers and riders killed in road crashes in Australia fell from 1989 to 1992 but has remained similar since then. The reduction in the percentage of drivers and riders killed with BAC>.05 in 1998-2000 occurred in the context of the number of drivers and riders killed with BAC>.05 remaining constant while the total number killed increased.

![Figure 1. Total numbers of riders and drivers killed in road crashes in Australia, numbers with BAC>.05% and percent who had BAC>0.05%. Data from ATSB except 1999 & 2000 NSW data provided by RTA and 2000 Victorian data provided by TAC & VicRoads.](image)

There is no reliable source of national data for non-fatal crashes to allow a comparison of the extent of involvement of alcohol in fatal and non-fatal crashes or trends in alcohol.
Involvement. One published estimate suggests that there are about 18 hospitalisations for every death.[5]

In most States, the percentage of drivers (or crashes) for which BAC data is unknown is large for non-fatal crashes. An examination of NSW data shows that the reduction in the trend in the percentages of fatal and injury crashes that involve alcohol has been similar (see Figure 2). However, the percentage of injury crashes for which alcohol involvement is unknown has increased dramatically, making interpretation of the data difficult.

![Figure 2](image_url)

Figure 2. Percentages of fatal, injury and non-casualty crashes involving at least one motor vehicle controller with BAC>.05% or where this was unknown in New South Wales. Data compiled from Roads and Traffic Authority Statistical Statements.

Potential Contributors to Drink Driving Crashes

Recorded drink driving crashes are the final step in a series of events, where other factors contribute to the final outcome. The steps include:

1. Alcohol consumption
2. Drink driving
3. Crash occurrence
4. Crash severity
5. Identification and recording of crashes

A number of public health initiatives seek to reduce excessive alcohol consumption. The main purpose of Random Breath Testing is to separate alcohol consumption from driving, although it may also act to reduce alcohol consumption if alternative means of transport to/from the places of consumption are sufficiently difficult. Relatively little work has addressed the link between drink driving and crash occurrence, although improved lighting and delineation and road improvements such as divided carriageways and signalising intersections may reduce the occurrence of certain types of drink driving crashes. The relationship between crash occurrence and crash severity is complex, being affected by
travel speed, restraint use, the crashworthiness of vehicles and the nature of the road and roadside. Identification and recording of drink driving crashes generally improves with crash severity, but may be poorer where crashes occur further away from Police and medical facilities and depends on the effectiveness of alcohol testing processes.

**Trends in alcohol consumption**

Figure 3 shows that trends in the per capita alcohol consumption by persons aged 15 and over in Australia in the period 1990-1997 reflect the patterns evident in alcohol-related driver and pedestrian fatalities.[5] A decline in the early 1990s had tapered off by 1994. The consumption of light beers and wine increased while that for other beers and spirits decreased. Consumption was consistently higher in non-metropolitan than capital city areas and the Northern Territory, which has the highest involvement of alcohol in fatal road crashes, has the highest per capita alcohol consumption.[6]

![Figure 3. Alcohol related driver and pedestrian road fatalities per 100,000 persons and per capita consumption of pure alcohol. Figure taken from Chikritzhs et al (2000).](image)

**Reported drink driving attitudes and behaviours**

Public attitudes to drink driving may play a role in mediating the relationship between alcohol consumption and drink driving. The results of the Community Attitudes to Road Safety series of surveys[7] suggest that Australians’ views about the importance and danger of drink driving may be weakening. The percentage of Australians who considered that drink driving was the factor that most often leads to road crashes fell from 23% in 1993 to 11% in 2002. The percentage of participants reporting they never drink and drive rose from 34% in 1993 to 43% in 1995, but then fell to 37% in 2002. These drivers appear to have switched from not drinking and driving to restricting their drinking before driving. The proportion of drivers who reported never drinking fell from 21% in 1993 to 16% in 2002.

**Rural and remote areas**

Drink driving is more prevalent in rural and remote areas than in cities. In NSW in 2001, 29.9% of fatal crashes occurring in non-urban country areas (country areas with speed limits over 80 km/h) involved at least one driver or rider with BAC>0.05%, compared with
18.5% of fatal crashes in other areas (metropolitan and country areas with speed limit up to and including 80 km/h).[8] Factors such as difficulties in enforcement and lesser availability of alternative forms of transport may contribute to this finding. Another factor constraining the effectiveness of drink driving enforcement in rural areas is the reluctance of courts to impose licence disqualifications where drivers claim these could cause hardship.

In many Australian states, reductions in road trauma have been greater in urban areas than in country areas. This is reflected in Australia-wide figures that show that from 1989 to 1997, the percentage of fatal crashes that occurred in speed zones of 100 km/h or greater increased steadily from 50% to more than 57%. Given the greater involvement of alcohol in rural crashes, this may be constraining potential reductions in the overall involvement of alcohol in crashes.

In NSW, more than two-thirds of fatal drink drive crashes involve a single vehicle, typically leaving the roadway and hitting an object off the road. “These statistics indicate that improving the road environment and making it more ‘forgiving’ may reduce the risk or severity of a crash involving alcohol”. [9]

**Failure to Wear Seat Belts**

Compared to other drivers in fatal crashes, drink drivers are twice as likely to have not been using a seatbelt or helmet (and seven times as likely to have been both speeding and not using a seatbelt or helmet).[9] The failure to wear seat belts by drink drivers may result in their being unable to benefit from improvements in vehicle crashworthiness to the same extent as sober drivers. Changes to vehicle design to incorporate seat belt interlock systems may have their major benefit for drink drivers.

**Effects on Drunken Pedestrians**

The extent to which the emphasis on enforcement of sanctions for drink driving has contributed to alcohol-affected pedestrian fatalities is unknown. In 1998 there were 109 killed youth and adult pedestrians with BAC>0.05%[10] compared with 206 killed drivers and riders. In 1997-99, 70% of the killed male pedestrians aged 15-54 had a BAC>.05.[11]

**Recidivists**

Recidivist (repeat) drink drivers are a significant problem. Research conducted by the RTA[9] found that 40% of drink drive offenders in 1995-97 had at least one previous drink driving conviction. This figure had not fallen since 1984-95. In Victoria between 1988 and 1998, the proportion of detected drink drivers who had prior drink driving convictions increased from 20% to 27%.[12]

These results suggest that not only do some drivers continue to drink and drive despite widespread enforcement and public education but that this behaviour is not deterred by being convicted for drink driving and even losing their licence. Police response has been to supplement RBT with more targeted forms of detection, but detection and loss of licence is unlikely to prevent drink driving by this group. While alcohol interlock programs have been trialed in several States, voluntary programs appear to have little attraction to a group with little motivation to be law-abiding. Many of these drivers are alcohol-dependent and drink driving is a consequence of their dependence, rather than a deliberate choice.[13] Prevention and treatment of alcoholism has met with limited success. There has been little attempt to apply non-licence sanctions to recidivist drink drivers in Australia. While some States have considered vehicle sanctions, none have chosen this option. It
may be that some of the remaining drink drivers (not necessarily recidivists) exhibit a wide variety of socially unacceptable behaviours and road safety measures may not be the most effective ways of bringing about reductions in drink driving by these groups.

**Conclusions**

Despite the effectiveness of the Australian package of legislation, enforcement and public education in halving the incidence of drink driving in crashes where drivers and riders are killed the remaining involvement of alcohol in fatal road crashes in Australia is unacceptably high and, most importantly, has not fallen in the last decade. BAC data for drivers in non-fatal crashes are too patchy to measure whether any changes have occurred. The factors that may be preventing further reductions in the involvement of alcohol in crashes include: the failure to further reduce alcohol consumption, relatively more rural crashes, the disproportionate non-use of seat belts by drink drivers meaning that they are benefiting less from improvements in vehicle safety, and the failure to reduce the level of re-offending. It may be that seat belt interlocks and crashworthy roadsides may have more potential to bring about decreases in drink driving fatalities and serious injuries in Australia than alcohol interlocks and further increases in RBT and associated public education.

**References**


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