



# Alcohol-related crash trends

Drinking any amount of alcohol impairs people's driving ability and increases the risk and severity of crashes. To reduce alcohol-related road trauma, good policies are needed that are informed by high-quality data on alcohol-related crashes and interventions.

## Drinking and driving

The more alcohol a person drinks before driving, the higher their risk of crashing and seriously injuring or killing themselves and others. Interventions are needed to discourage people from drink driving and to make sure those who do are detected and penalised. Drivers with substance-abuse problems should also be screened and given the appropriate help.

Quality data on alcohol-related crashes and interventions will help policymakers and researchers to:

- draw accurate conclusions on crash trends
- assess the effectiveness of interventions
- use effective strategies to reduce alcohol-related road trauma.

## Research

This research project was undertaken during 2021 and finished in early 2022. Researchers investigated New Zealand alcohol-related crash data from between 2010 and 2020. The aim was to find out how relevant the data is and to study crash trends and their causes.

The researchers:

- reviewed international literature
- identified alcohol-related crash data and described its relevance
- explained the New Zealand data, what can be inferred from it, and what new data and testing is needed
- identified driver attitudes and behaviour related to alcohol and crashes
- examined alcohol-related crash trends and their connection to other relevant changes in New Zealand over the same time
- recommended new approaches to data collection and its analysis and use.

The research project was done in three stages:

1. International literature review on data collection and reporting practices to:
  - a. identify factors that contribute to alcohol-related crashes
  - b. review alcohol-related crash trends and enforcement practices with other relevant countries.
2. Interview stakeholders from relevant New Zealand organisations to:
  - a. understand how alcohol-related crash and drink-driving enforcement data is collected, and how this has changed over time
  - b. identify other potential sources of crashes and give insights into current crash trends and drink-driving behaviour.
3. Analyse selected datasets, investigate alcohol-related crash coding in the Waka Kotahi Crash Analysis System (CAS), and evaluate the data to understand trends in drink driving and alcohol-related road trauma from 2010 to 2020.

## Legislation changes and crash trends

The last major change in New Zealand drink-driving legislation was made in December 2014. In line with international best practice, this dropped the blood alcohol limit to 50 milligrams per decilitre for drivers aged 20 and over.

However, crash data did not show a decrease in alcohol-related deaths and serious injuries (DSIs). In fact, the proportion of alcohol-related DSIs increased between 2014 and 2016 and fluctuated considerably from 2017 to 2020. So, either:

- the change in alcohol limit was not effective in reducing alcohol-related DSIs, or
- the way crash data was collected changed, and that affected how alcohol-related crashes were reported.

In New Zealand, drivers are routinely tested for alcohol after a crash. But, from late 2018 onwards, the alcohol-related 'cause' codes reported in the CAS were inaccurate for many drivers, so this data should not be used.

Meanwhile, hospitalised drivers with blood alcohol levels over the legal limit dropped between 2014 and 2020. This likely means the proportion of alcohol-related DSI crashes has reduced over time, despite the CAS data suggesting otherwise.

### Random breath testing

New Zealand Police (NZ Police) did not meet random breath testing (RBT) targets in the latter half of the decade, suggesting that RBT was under-funded or not prioritised. The Dräger Alcotest 7510 is a newer breath testing device used by NZ Police and provides much richer information on breath testing activity, including:

- date and time stamps
- location coordinates
- test results
- type of test performed.

This data could help NZ Police to target high-risk drivers, locations and times and allow more frequent reporting, so under-performance against RBT targets will be easier to detect and correct.

### New Zealand and international best practice

The researchers also investigated how New Zealand's alcohol limits and penalties compare with similar countries and against best practice. They found current penalties (particularly for lower level first offences) may not have a strong deterrent effect, likely diluting the effect of the 2014 legislation.

## Recommendations

To improve the collection and reporting of alcohol-related crash and enforcement data, the researchers recommend:

- reviewing and improving the interface on the NZ Police Traffic Crash Report application to improve data collection by police officers
- improving police officer training in traffic crash reports and highlighting the importance of accurate and reliable crash data and how this is used by other agencies
- investigating and correcting the root cause of the driver 'breath refused' and 'blood pending' errors observed in the data from late-2018 onwards
- developing metadata for CAS users on the interpretation of alcohol-related data
- investigating a new data-sharing approach using blood test data from the Institute of Environmental Science and Research (ESR)
- reviewing alcohol-related driver data in CAS against privacy legislation
- removing the cause code '101' (alcohol suspected) for crashes that happened after the CAS system update in 2016 (this is coded against all drivers tested for alcohol, regardless of whether alcohol is suspected)
- supporting NZ Police to frequently download and report breath test counts
- supporting NZ Police to attend non-injury crashes to collect more complete CAS data
- removing invalid sample dates and other human errors from the ESR datasets
- investigating why annual breath tests administered by NZ Police are decreasing and targets have not generally been met in recent years.

Some of these recommendations could also be used with other drug-related data collection.

## Further research

Potential areas for future research include:

- analysing detailed data to know which enforcement activities are targeting high-risk locations and drivers
- longer-term studies to better understand how attitudes and perceptions shifted around 2014 to 2016 when the legal alcohol limits were reduced
- supporting the Accident Compensation Corporation's investigation into whether an 'alcohol' flag against Emergency Department admissions (recorded in the Stats NZ Integrated Data Infrastructure) could be linked to injury and claims data as an alternative method for identifying alcohol-related crashes and injuries
- doing more research on best practice alcohol limits, drink-driving penalties and driver licensing to see if further legislative changes should be made
- doing further analysis on Dräger Alcotest 7510 breath test data to identify and assess how effective RBT checkpoints are by location and time of day to better target future checkpoints
- identifying and reviewing previous New Zealand research that used CAS data coding for 'alcohol suspected', 'breath refused' and 'blood pending', to see if the research conclusions are affected by using corrected CAS data.



RR 694: *Alcohol-related crash trends*, Waka Kotahi NZ Transport Agency research report.  
Available at [www.nzta.govt.nz/resources/research/reports/694](http://www.nzta.govt.nz/resources/research/reports/694)