

# THE EFFECT OF SANCTIONS ON VICTORIAN DRINK-DRIVERS

Fri, 16 Sep 2016

## KEY FINDINGS

- Licence bans for drink-driving have resulted in fewer crashes and offences.
- The time between detection for drink-driving and a licence ban taking effect is associated with high rates of offending.
- A ban of 6 to 12 months appears most effective in reducing drink-driving and other traffic offending.
- Alcohol interlocks are effective in reducing drink-driving offences while fitted.
- Alcohol interlocks had an effect on first time high level offenders that endured after the interlock was removed, however repeat offenders returned to prior levels of offending.
- The introduction of immediate licence suspension for a BAC of 0.10 rather than the previous level of 0.15 BAC was effective in reducing drink-driving re-offending and crashes, as well as other casualty crashes.
- 71% of drink-drivers were once only offenders and 29% were repeat offenders.
- Across an eight year period, over half of all drink-drivers had a speeding offence (not necessarily at the same time as their drink-driving offence).
- The second most common other offence after speeding was unauthorised driving (driving without a valid licence).
- Many first offenders go on to re-offend.
- Repeat offenders were more likely to reoffend than first offenders (24% versus 14%).

# Contents

<b>SUMMARY</b> .....	<b>5</b>
BACKGROUND .....	5
LICENCE CANCELLATION .....	5
EFFECTIVENESS OF ALCOHOL INTERLOCKS AND OTHER SANCTIONS ON REPEAT DRINK-DRIVERS .....	6
EFFECTIVENESS OF ALCOHOL INTERLOCKS AND OTHER SANCTIONS ON YOUNG AND HIGH LEVEL FIRST-TIME DRINK-DRIVERS .....	6
EFFECTIVENESS OF IMMEDIATE LICENCE SUSPENSION FROM 0.10 BAC.....	6
CHARACTERISTICS OF DRINK-DRIVERS.....	7
CONCLUSIONS.....	8
<b>1. DRINK-DRIVING AND ROAD TRAUMA</b> .....	<b>9</b>
<b>2. THE HISTORY OF VICTORIAN DRINK-DRIVING SANCTIONS</b> .....	<b>9</b>
<b>3. THE AIMS OF THE VICTORIAN DRINK-DRIVING STUDY</b> .....	<b>10</b>
<b>4. EFFECTIVENESS OF LICENCE CANCELLATION</b> .....	<b>12</b>
4.1. BACKGROUND .....	12
4.2. ALL DRINK-DRIVERS.....	12
4.3. REPEAT DRINK-DRIVERS .....	13
4.4. LENGTH OF LICENCE BAN .....	14
<b>5. EFFECTIVENESS OF ALCOHOL INTERLOCKS AND OTHER SANCTIONS ON REPEAT DRINK-DRIVERS</b> .....	<b>15</b>
5.1. BACKGROUND .....	15
5.2. FINDINGS .....	15
5.2.1. <i>Licence and alcohol interlock periods</i> .....	15
5.2.2. <i>Length of licence ban</i> .....	15
<b>6. EFFECTIVENESS OF ALCOHOL INTERLOCKS AND OTHER SANCTIONS ON YOUNG AND HIGH LEVEL FIRST-TIME DRINK-DRIVERS</b> .....	<b>16</b>
6.1. BACKGROUND .....	16
6.2. FINDINGS .....	17
6.2.1. <i>Licence and alcohol interlock periods</i> .....	17
6.2.2. <i>Length of licence ban</i> .....	19
6.2.3. <i>Offence rates during the licence ban and alcohol interlock period</i> .....	19
<b>7. EFFECTIVENESS OF IMMEDIATE LICENCE SUSPENSION FROM 0.10 BAC</b> .....	<b>19</b>
7.1. BACKGROUND .....	19
7.2. FINDINGS .....	19
<b>8. CHARACTERISTICS OF DRINK-DRIVERS</b> .....	<b>21</b>
8.1. BACKGROUND .....	21
8.2. CHARACTERISTICS OF DRINK-DRIVERS.....	22
8.2.1. <i>All drink-drivers and offending</i> .....	22
8.2.2. <i>Comparison of first and repeat drink-driver offending</i> .....	23
8.2.3. <i>Comparison of once only and repeat drink-driver offending</i> .....	24
8.2.4. <i>Crash involvement of all drink-driving offenders</i> .....	25
8.2.5. <i>Offender re-licensing rates</i> .....	26
<b>9. CONCLUSIONS</b> .....	<b>26</b>
<b>GLOSSARY</b> .....	<b>28</b>

<b>REFERENCES.....</b>	<b>32</b>
<b>APPENDIX A – HISTORY OF DRINK-DRIVING COUNTERMEASURES .....</b>	<b>34</b>
<b>APPENDIX B – INCREASED PENALTIES FOR DRINK-DRIVERS AND EXPANDED ALCOHOL INTERLOCK REQUIREMENTS INTRODUCED ON 11 OCTOBER 2006 .....</b>	<b>37</b>

## Tables

Table 1 – Effect of licensing cycle periods on offences and crashes on all drink-drivers (1 January 1996 and 12 May 2002).....	13
Table 2 – Effect of licensing cycle periods on offences and casualty crashes on repeat drink-drivers (1 January 1996 and 12 May 2002) .....	14
Table 3 – Effect of licensing cycle periods and alcohol interlocks on drink-driving and other offending and casualty crashes on repeat drink-drivers.....	16
Table 4 – Effect of licensing cycle periods and alcohol interlocks on offences and crashes on young and high level first-time BAC drink-drivers .....	18
Table 5 – Percentage changes in offending and crashes by BAC offender group after introduction of immediate suspension at 0.10 BAC .....	20
Table 6 – Numbers, percentages, annualised average number of all traffic offence types ..	22
Table 7 – Differences between first offenders and repeat offenders (at first offence) .....	23
Table 8 – Percent of first and repeat offenders by percentage at subsequent BAC offence level .....	24
Table 9 – Significant differences between once only and repeat offenders .....	24

## Figures

Figure 1 – Summary of drink-driving countermeasures in Victoria.....	10
Figure 2 – The licensing cycle for drivers who have their licences cancelled for a drink-driving offence.....	11

# Summary

## Background

Drink-driving continues to be a serious problem in Victoria, resulting in a substantial number of deaths and serious injuries. VicRoads therefore commissioned the Centre for Accident Research and Road Safety – Queensland (CARRS-Q) to examine the effect of *licence cancellation*<sup>1</sup> and *alcohol interlock* sanctions on Victorian drink-drivers' offences and *casualty crashes*. The research considered:

1. Stages of the *licensing cycle*: i) between the drink-driving offence and the start of the licence ban (pre-licence ban), ii) during the licence ban, iii) licence re-issued, iv) post-ban unlicensed period (if re-licensing was not sought) for drink-driving offenders before alcohol interlocks were in use in Victoria (1 January 1996 to 12 May 2002).
2. Mandatory alcohol interlock fitment and the licensing cycle for *repeat drink-drivers* (13 May 2002 to 10 October 2006).
3. Mandatory alcohol interlock fitment and the licensing cycle for drink-drivers with high BACs and younger drivers with a BAC greater than 0.07 (11 October 2006 to 30 September 2014).
4. Immediate *licence suspension* at 0.10 BAC or higher for full licence holders (lowered from 0.15 BAC on 1 October 2009).

In addition, the characteristics of *first*, *once only* and *repeat drink-driving offenders* were identified. The results reported below are *statistically significant*<sup>2</sup> unless stated. Words or phrases in *blue italics* are explained in the Glossary on page 28.

## Licence cancellation

The investigation into licence cancellation indicated:

- It was effective at reducing drink-driving and *other traffic offence* rates, as well as reducing *drink-driving crash* and *other traffic crash* rates.
- The benefits persisted; offence and crash rates were lower after licence cancellation than before the *licence ban* started.
- The benefits occurred for all drink-drivers (including repeat offenders).
- During the licence ban the reduction in drink-driving and other offending ranged from 66% to 71% and for crashes it ranged from 78% to 82% for all drink-drivers.
- Offences were most common in the time between detection of the drink-driving offence and the start of the licence cancellation.
- While not tested statistically, a licence ban of 6 to 12 months appears optimal in reducing drink-driving and other traffic offending, as shorter or longer bans were associated with higher offending rates.

---

<sup>1</sup> Words or phrases in *blue italics* are explained in the Glossary on page 28.

<sup>2</sup> Any positive results reported were 'statistically significant' unless stated. The word 'significant' is used to replace the term.

## **Effectiveness of alcohol interlocks and other sanctions on repeat drink-drivers**

The analysis of this group of repeat drink-drivers found:

- Alcohol interlocks were effective in reducing offending while fitted. There was a 71% reduction in drink-driving offences and a 25% reduction in other offending.
- Alcohol interlocks had no effect on drink-driving crashes or other crashes.
- Licence ban periods of 6-12 months were associated with an 11% reduction in drink-driving offences among repeat offenders. Repeat offenders also had a 9% reduction in other traffic offences.
- Licence bans of 12 months or longer were associated with a 12% reduction in drink-driving offences among repeat offenders.
- There were no differences in offending or crashes across the licensing cycle taken as a whole, however this reflected high levels of offending before the licence ban and a return to offending after the alcohol interlock was removed.

## **Effectiveness of alcohol interlocks and other sanctions on young and high level first-time drink-drivers**

These groups had reduced offences at a number of points:

- The rate of drink-driving offending decreased by:
  - 26% over the entire licensing cycle (from detection of offence through to the licence being re-issued)
  - 18% for the licence re-issued period (after completion of the alcohol interlock condition).
- The rate of other traffic offending decreased by:
  - 8% over the entire licensing cycle
  - 10% during the licence ban
  - 17% for the licence re-issued period.
- Alcohol interlocks, while fitted were successful in reducing drink-driving offending by 27% and other traffic offending by 7%.

No crash reductions were found.

Differing lengths of licence ban did not have an impact on drink-driving and traffic offending.

## **Effectiveness of immediate licence suspension from 0.10 BAC**

Reducing the immediate licence suspension threshold for fully licensed drivers, from 0.15 BAC or above to 0.10 BAC or above, was effective. This change also had an effect on offenders with low-range BACs (BAC - 0.001 - 0.099) even though they were not subject to it. There were reductions after the change in:

- drink-driving re-offending for low and mid-range BAC offenders (by 14% and 18% respectively)
- casualty crashes for low and mid-range BAC offenders (by 21% and 34% respectively)
- drink-driving casualty crashes for low and mid-range BAC offenders (by 44% and 50% respectively).

The impact of the change was greatest on offenders aged 16 to 49 years and males.

There was no impact on high-range offenders (0.15 BAC and over) who were already subject to immediate licence suspension.

## Characteristics of drink-drivers

Over an eight year time period:

- On average there were:
  - 14,826 offenders per year
  - 17,984 drink-driving offences per year
  - 88,349 other traffic offences per year, with speeding offences the most common.
- There were 83,321 once only offenders and 34,694 repeat offenders.
- Many first offenders go on to re-offend.
- Further offending was more likely for repeat offenders (24%) versus first offenders (14%).
- Repeat offenders were more likely to have the following characteristics compared with once only offenders:
  - male
  - probationary driver
  - aged 25 to 49
  - live in regional/remote areas and in areas in the bottom 20% of social advantage
  - unlicensed
  - commit other traffic offences at the same time as a drink-driving offence<sup>3</sup>.
- Crash involved drink-drivers, when compared with non-crash involved drink-drivers were more likely to be aged 16 to 24, have a probationary licence, BAC of 0.15 or more at first offence and live in regional/remote areas.
- Repeat offenders involved in crashes were more likely to be male, aged 25 to 49, unlicensed and to have a BAC of 0.15 or above at the time of the crash.
- Offenders who were detected committing a low-range BAC first offence mostly re-offended at mid-range or at low-range BAC.
- The majority of offenders with a mid-range BAC first offence who re-offended were mostly detected at mid-range BAC.
- Nearly 3% of drink-driving offenders had one drink-driving related crash (0.1% had two or more drink-driving crashes).
- 5% of drink-driving offenders had one crash that did not involve drink-driving (0.2% had two or more).
- Of those involved in crashes, most were involved in minor casualty crashes at *high alcohol times* (nearly 4%).
- About 5.5 times as many offenders were involved in drink-driving crashes during high alcohol times as during *low alcohol times*.

---

<sup>3</sup> Note that repeat and once only offenders were compared on each trait, e.g. for gender male versus female, for licence type – probationary versus full licence versus learner, etc.

- More than three-quarters (49,907) of offenders who experienced a licence ban were re-licensed within one month of being eligible, with approximately 3% (1,898) still not re-licensed by the end of two years.

## **Conclusions**

This study indicates that both licence bans and alcohol interlocks are effective in reducing drink-driving and improving road safety outcomes, particularly when both sanctions are being actively applied to offenders.



## 1. Drink-driving and road trauma<sup>4</sup>

Drink-driving continues to be a serious problem in Victoria, resulting in a substantial number of deaths and serious injuries. Alcohol-related crashes are one of the leading causes of death on the roads with 32% of Victorian driver fatalities between 2008 and 2011 having a BAC over zero (Coroners Prevention Unit, 2013).

There are considerable personal and economic costs arising from drink-driving, and of particular concern is the proportion of *repeat drink-driving offenders*. In Victoria 30% of detected drink-drivers have had a previous drink-drive conviction in the preceding 10 year period (Boorman, 2012). There is a large body of literature that has demonstrated drink-drivers are disproportionately represented in crash statistics, particularly repeat offenders (Brown et al., 2002; Freeman et al., 2006; Hedlund & McCartt, 2002).

The main countermeasures used to address drink-driving are fines, *licence bans*, *alcohol interlocks* and alcohol education and treatment programs. The application of such licensing sanctions and behavioural measures has consistently proven an effective general and specific deterrent to offending (Peck, 1991; Ross, 1992).

Sanctions alone appear to be less effective in reducing alcohol-impaired driving among some repeat offenders (Hedlund & McCartt, 2002; Freeman et al., 2006). As a result, alcohol interlocks are increasingly being combined with licence bans in an effort to reduce re-offending. However, while alcohol interlock devices are effective in preventing drink-driving recidivism while installed, re-offence rates typically return to previous levels after removal of the device (Willis et al., 2004).

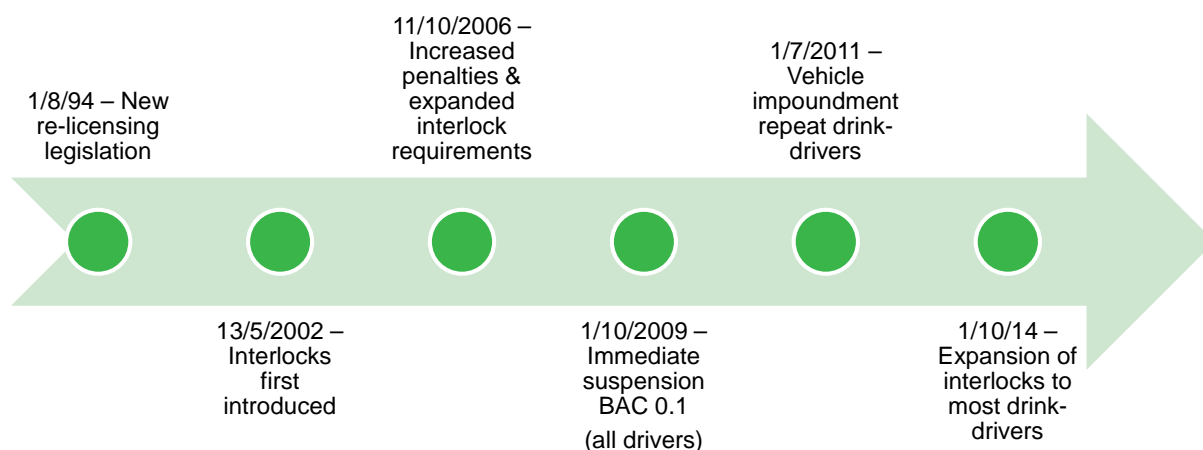
In Victoria, a number of interventions have been progressively introduced to address drink-driving. This report details the impact of the Victorian approach to managing drink-driving on re-offence and crash rates.

## 2. The history of Victorian drink-driving sanctions

A brief summary of Victorian drink-driving sanctions is outlined in Figure 1. See Appendix A for more detailed information.

---

<sup>4</sup> Words or phrases in *blue italics* are explained in the Glossary on page 28.



**Figure 1 – Summary of drink-driving countermeasures in Victoria**

The major changes noted in Figure 1 were:

- In August 1994, new re-licensing laws for fully licensed drivers were introduced. This allowed drink-driving offenders on a probationary licence to obtain a full licence with a Z (zero BAC) condition. Previously, these drivers had to remain on a probationary licence, subject to other probationary licence conditions such as lower powered vehicles.
- In May 2002, the first mandatory alcohol interlocks were introduced, for repeat offenders (fitment began in May 2003). In October 2006, mandatory alcohol interlock requirements were expanded to high-level (BAC 0.15 and above) first time offenders and younger drivers with a BAC greater than 0.07. Increased penalties were also introduced (Appendix B).
- On 1 October 2009 immediate *licence suspension* for those with a BAC of 0.10 and above was introduced (first and repeat offenders). The previous threshold for immediate licence suspension was 0.15 BAC for all full licence holders (introduced on 15 December 2002). The immediate licence suspension threshold for learners and probationary drivers remained at 0.07 BAC.
- In July 2011, 30 days minimum vehicle impoundment at police discretion was introduced for repeat drink-drivers.
- In October 2014, the alcohol interlock program was expanded to encompass nearly all drink-drivers.

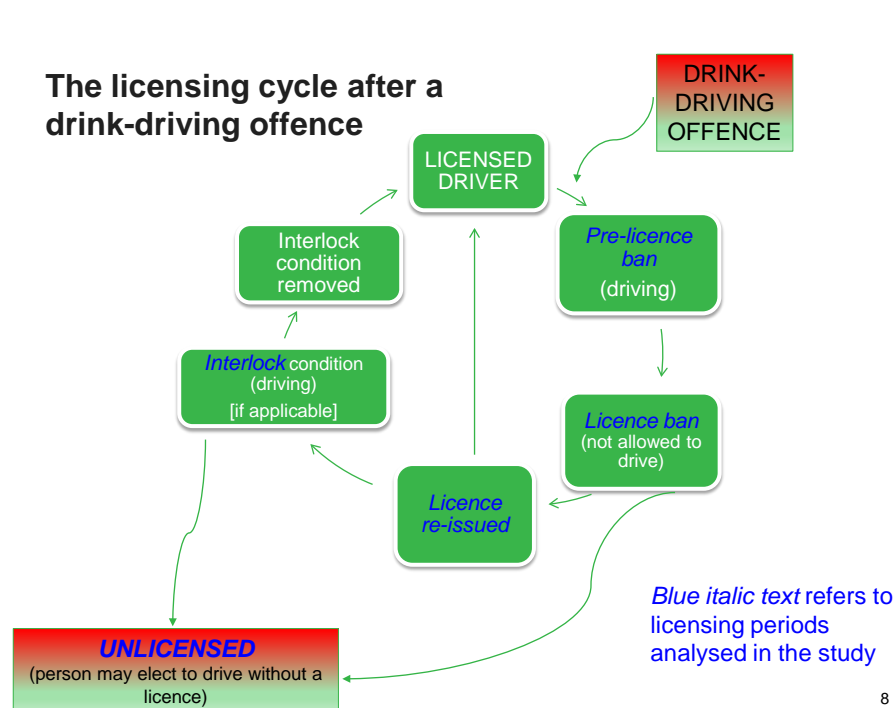
### **3. The aims of the Victorian drink-driving study**

The Victorian drink-driving study was undertaken in 2015 by the Centre for Accident Research and Road Safety – Queensland (CARRS-Q) on behalf of VicRoads. It involved examining the effect of *licence cancellation* and *alcohol interlock* sanctions on a large sample of Victorian drink-drivers' offences and *casualty crashes*. This was achieved by examining whether these interventions influenced offenders' subsequent crash and re-

offence rates, both for drink-driving and for other offences. Specifically, the research considered:

1. Stages of the *licensing cycle*: i) between the drink-driving offence and the start of the licence ban (pre-licence ban), ii) during the licence ban, iii) licence re-issued, iv) post-ban unlicensed period (if re-licensing was not sought) for drink-driving offenders before alcohol interlocks were in use in Victoria (1 January 1996 to 12 May 2002).
2. Mandatory alcohol interlock fitment and the licensing cycle for *repeat drink-drivers* (13 May 2002 to 10 October 2006).
3. Mandatory alcohol interlock fitment and the licensing cycle for drink-drivers with high BACs and younger drivers with a BAC greater than 0.07 (11 October 2006 to 30 September 2014).
4. Immediate *licence suspension* at 0.10 BAC or higher for full licence holders (lowered from 0.15 BAC on 1 October 2009).

The investigation considered differences in the characteristics of drink-drivers such as *first offenders* versus repeat offenders, age, gender, licence type and residential region. An additional investigation was undertaken to determine if there were differences between first and repeat offenders with respect to total offences, the nature of offences and licence bans. Figure 2 outlines the licensing cycle components that were investigated.



**Figure 2 – The licensing cycle for drivers who have their licences cancelled for a drink-driving offence**

## 4. Effectiveness of licence cancellation

### 4.1. Background

This investigation applied to drivers with a drink-driving offence between 1 January 1996 and 12 May 2002, prior to the use of alcohol interlocks in Victoria. Stages in the licensing cycle evaluated were:

- between the offence and the start of the licence ban
- during the licence ban
- licence re-issued
- post-ban *unlicensed* period (where re-licensing was not sought) (see Figure 2 on page 11).

There were 29,204 drink-driving offenders in this investigation:

- nearly 16% were repeat drink drivers
- nearly 30% were either drivers:
  - a) with a BAC greater or equal to 0.15, or
  - b) aged 25 and over or with a probationary licence, and with a BAC greater than 0.07 and less than 0.15.

### 4.2. All drink-drivers

Data that combined all drink-drivers in the study period indicated rates of crashes and offending that were much higher during the period between detection of their *first offence* and the licence ban period than at any other time. There was a lower rate of offending after re-licensing than the period before the licence ban.

Other positive results for all drink-drivers included (Table 1):

- They had a *significantly* lower rate of drink-driving offending during licence bans compared with the pre-licence ban and licence re-issued periods.
- They also had *significantly* lower rates of other traffic offending during licence bans compared with the pre-licence ban and licence re-issued periods.
- There were reductions in drink-driving and *other crashes* during the licence ban, unlicensed and licence re-issued periods.
- There was a *significant* reduction in other offending for the unlicensed period compared with the licence ban.
- Drink-driving and other offences rates were significantly lower during the unlicensed period compared with the licence re-issued period. Similar reductions occurred for crashes.
- The licence re-issued period was associated with a significantly lower rate of drink-driving offending than the pre-licence ban period.
- The licence re-issued period also had a significantly lower rate of *drink-driving crashes* and other crashes than the pre-licence ban period.

**Table 1 – Effect of licensing cycle periods on offences and crashes on all drink-drivers (1 January 1996 and 12 May 2002)**

Licensing cycle period (bolded period is the period with the reduction or increase in offences/crashes)	Drink-driving offences	Other offences	Drink-driving casualty crashes	Other casualty crashes
<b>Licence ban</b> <i>compared with pre-licence ban</i>	70% ↓	66% ↓	79% ↓	81% ↓
<b>Licence ban</b> <i>compared with licence re-issued</i>	47% ↓	54% ↓	55% ↓	70% ↓
<b>Unlicensed</b> <i>compared with licence ban</i>	5% non-significant increase	13% ↓	17% non-significant increase	39% ↑
<b>Unlicensed</b> <i>compared with licence re-issued</i>	44% ↓	60% ↓	47% ↓	58% ↓
<b>Licence re-issued</b> <i>compared with pre-licence ban</i>	43% ↓	27% ↓	53% ↓	44% ↓

All results significant unless indicated (green arrows – decrease, red arrows – increase)

### 4.3. Repeat drink-drivers

The following positive results were obtained for repeat drink-drivers (Table 2):

- There was a lower rate of drink-driving offences after the licence was re-issued compared with the period before the licence ban.
- There was a significantly lower rate of drink-driving offences during licence bans compared with the period before the licence ban and the licence re-issued periods.
- Similar reductions were achieved for drink-driving crashes, other crashes and other offending.
- The licence re-issued period had a significantly lower rate of drink-driving offending and other offending than the pre-licence ban period. There were fewer crashes, but the reductions were non-significant.

The following negative results were obtained for repeat drink-drivers (Table 2):

- They had rates of crashes and offending that were much higher during the period between detection of their first offence and the licence ban than during any other licensing period.
- Although drivers who remained unlicensed had reduced offending, there was an increase in other crashes during the period unlicensed compared with the licence ban.

**Table 2 – Effect of licensing cycle periods on offences and casualty crashes on repeat drink-drivers (1 January 1996 and 12 May 2002)**

Licensing cycle period ( <b>bolded</b> period is the period with the reduction or increase in offences/crashes)	Drink-driving offences	Other offences	Drink-driving casualty crashes	Other casualty crashes
<b>Licence ban</b> <i>compared with pre-licence ban</i>	71% ↓	71% ↓	78% ↓	82% ↓
<b>Licence ban</b> <i>compared with licence re-issued</i>	60% ↓	65% ↓	66% ↓	77% ↓
<b>Unlicensed</b> <i>compared with licence ban</i>	13% non-significant reduction	30% ↓	74% non-significant increase	114% ↑
<b>Unlicensed</b> <i>compared with licence re-issued</i>	65% ↓	76% ↓	41% non-significant reduction	52% ↓
<b>Licence re-issued</b> <i>compared with pre-licence ban</i>	28% ↓	17% ↓	35% non-significant reduction	19% non-significant reduction

All results significant unless indicated (green arrows – decrease, red arrows – increase)

#### 4.4. Length of licence ban

Drink-drivers who had a licence ban of less than 6 months had the highest rate of other traffic offending for all licence periods, except for the licence re-issued period.

Those offenders with a licence ban of 12 months or longer had the highest rates of drink-driving offending in all licence periods except for the licence ban period (highest for drivers on a ban of 6 months or less). For the licence re-issued period, those with a 12 month or longer ban had the most other traffic offending.

While not tested statistically, a licence ban of 6 to 12 months appears optimal in reducing drink-driving and other traffic offending as shorter or longer bans were associated with higher offending rates.

Licence bans reduced drink-driving re-offence rates, drink-driving crash involvement and general traffic re-offence rates among both first time and repeat offenders while they were banned. This finding is consistent with a large body of research that has demonstrated licence disqualification periods to be one of the most effective methods for reducing further drink-driving offences (Jones & Lacey, 1991; McArthur & Kraus, 1999; Nichais & Ross, 1991; Peck, 1991; Sadler & Perrine, 1984).

## 5. Effectiveness of alcohol interlocks and other sanctions on repeat drink-drivers

### 5.1. Background

The time period for this investigation was 1 January 1996 to 10 October 2006. This was divided into before and after 13 May 2002 - when alcohol interlocks were introduced for repeat drink-drivers. A comparison group of drink-driving offenders not required to fit alcohol interlocks was used to determine if adding an alcohol interlock condition made a difference to repeat drink-driving.

In order to evaluate the effectiveness of alcohol interlocks for repeat drink-drivers, groups were identified as follows:

- pre-*offender group* (repeat offenders no alcohol interlock) - 4,563 drivers
- post-*interlock group* (repeat offenders alcohol interlock) - 3,188 drivers
- pre-comparison group (all other drink-drivers no alcohol interlock before change) - 24,641 drivers
- post-*non-interlock comparison group* (all other drink-drivers no alcohol interlock after change) - 33,955 drivers.

### 5.2. Findings

#### 5.2.1. Licence and alcohol interlock periods

Table 3 shows the effect of the licensing cycle and alcohol interlocks on offences and crashes among repeat drink-drivers. There were no significant differences between groups for any of the individual licensing cycle time periods.

For repeat offenders, there were significant reductions in offending during the alcohol interlock period (Table 3):

- 71% reduction in drink-driving offences
- 25% reduction in *other traffic offences*.

#### 5.2.2. Length of licence ban

Licence ban periods of 6-12 months were associated with reduced drink-driving offences by repeat offenders and also the comparison group (11% and 28% respectively). There were 9% fewer other offences committed by repeat offenders, but 10% more other offences committed by the comparison group.

Licence bans of 12 months or longer were associated with reduced drink-driving offences by 12% for repeat offenders, whereas offences increased for the comparison group by 35%. This suggests bans of 6-12 months or longer may be effective for repeat offenders.

**Table 3 – Effect of licensing cycle periods and alcohol interlocks on drink-driving and other offending and casualty crashes on repeat drink-drivers**

Offence / crash type	Licensing cycle periods	Alcohol interlock
Drink-driving offences	✗	81% reduction interlock group vs. non-interlock comparison group 10% reduction  ✓
Other traffic offences	✗	25% reduction interlock group vs. non-interlock comparison group 8% <u>increase</u>  ✓
Drink-driving casualty crashes	✗	Insufficient data
Other casualty crashes	✗	72% reduction interlock group vs. non-interlock comparison group 37% reduction  ✗

✗ No significant differences between groups for individual licensing cycles and no effect for the licensing cycle in its entirety      ✓ Effective (significant results)

✗ No significant differences between groups for individual licensing cycles and no effect for the licensing cycle in its entirety      ✓ Effective (significant results)

## 6. Effectiveness of alcohol interlocks and other sanctions on young and high level first-time drink-drivers

### 6.1. Background

The time period for this investigation was 13 May 2002 to 30 September 2014. This was divided into before and after 11 October 2006 - when the expanded alcohol interlock



program was introduced for young drivers with a BAC over 0.07 and first time offenders with a BAC of 0.15 or higher. A comparison group of offenders with no alcohol interlock requirement was used to determine if the sanction regime (licensing cycle components, entire licensing cycle and the alcohol interlock condition) was effective for drink-drivers.

In order to evaluate the effectiveness of alcohol interlocks for these drink-driver groups, offender and comparison groups were identified as follows:

- pre-offender group (no alcohol interlock – before change) - 9,155 drivers
- post-interlock group (alcohol interlock – after change) - 13,681 drivers
- pre-comparison group – repeat<sup>5</sup> (other drink-driving offenders – no alcohol interlock – before change) - 24,800 drivers
- post-non-interlock comparison group – non-repeat (other drink-driving offenders – no alcohol interlock – after change) - 40,928 drivers.

## 6.2. Findings

### 6.2.1. Licence and alcohol interlock periods

There were significant reductions in drink-driving and other offending in the licence cycle periods (Table 4). The significant results for the post-interlock group were:

- Drink-driving offending decreased by:
  - 26% over the entire licensing cycle (from detection of offence through to the end of the licence re-issued period)
  - 18% for the licence re-issue period (after alcohol interlock condition removed).
- Other traffic offending decreased by:
  - 8% over the entire licensing cycle
  - 10% during the licence ban
  - 17% for the licence re-issued period (after alcohol interlock condition removed).
- Alcohol interlocks, while fitted, were successful in reducing drink-driving offending by 27% and other traffic offending by 7%.

There were no effects of the licensing cycle and alcohol interlock periods on crashes.

As was the case with repeat offenders, and consistent with previous research (Bailey et al., 2013; Elder et al., 2011), alcohol interlock conditions had a positive effect for first time high level offenders. In addition, there was reduced offending through the licensing cycle, including during the period after the alcohol interlock condition was removed. This may reflect a stronger deterrent effect for first-time offenders than for repeat offenders, or differences in characteristics such as prevalence of serious alcohol problems across the two groups.

For the young and high level first-time drink-drivers in this study it appears that alcohol interlocks had more than a purely incapacitating effect (i.e. preventing the vehicle from starting if the driver has been drinking), as the impact of the alcohol interlocks on drink-driving remained after the device was removed. This is unusual, as other evaluations

---

<sup>5</sup> Initially selected as a first offender, but these offenders may have offended again in the time period.

generally report that re-offence rates return to pre-installation levels after alcohol interlock removal (Bailey et al., 2013; Elder et al., 2011).

**Table 4 – Effect of licensing cycle periods and alcohol interlocks on offences and crashes on young and high level first-time BAC drink-drivers**

Offence / crash type	Licence cycle periods	Alcohol interlock
Drink-driving offences	<ul style="list-style-type: none"> <li>✓ post-lic restoration (56% reduction for interlock group vs. 38% reduction for post-non-interlock comparison group)</li> <li>✓ overall – from offence to post-lic restoration including ban and alcohol interlock period (38% reduction for interlock group vs. 12% reduction for post-non-interlock comparison group)</li> </ul>	<p>63% reduction for interlock group vs. 36% reduction for post-non-interlock comparison group</p> <p style="text-align: center;">✓</p>
Other traffic offences	<ul style="list-style-type: none"> <li>✓ during ban (10% reduction for interlock group vs. 19% increase for post-non-interlock comparison group)</li> <li>✓ post-lic restoration (17% reduction for interlock group vs. 11% increase for post-non-interlock comparison group)</li> <li>✓ unlicensed after ban (31% reduction for interlock group vs. 7% increase for post-non-interlock comparison group)</li> <li>✓ overall – from offence to post-lic restoration including ban and alcohol interlock period (8% reduction for interlock group vs. 23% increase for post-non-interlock comparison group)</li> </ul>	<p>7% reduction for interlock group vs. 7% increase for post-non-interlock comparison group</p> <p style="text-align: center;">✓</p>
Drink-driving casualty crashes	✗	✗
Other casualty crashes	✗	✗

✗ Not effective     
 ✓ Effective (significant results)

### 6.2.2. Length of licence ban

Differing lengths of licence ban did not have a differential impact on drink-driving or traffic offending.

### 6.2.3. Offence rates during the licence ban and alcohol interlock period

Rates of drink-driving and other offending remained steady throughout the start, middle and end of the licence ban period and the alcohol interlock period (if applicable) for all groups.

## 7. Effectiveness of immediate licence suspension from 0.10 BAC

### 7.1. Background

A before and after analysis of offences and crashes was undertaken to determine the effectiveness of immediate licence suspension for fully licensed first and repeat drink-driving offenders detected at 0.10 BAC and above (reduced from the previous threshold of 0.15 BAC). The before period was 1 January 1996 to 30 September 2009, and the after period was 1 October 2009 (when the change was introduced) to 30 September 2014.

For each offender only repeat offences were included in the analysis as the effect of immediate licence suspension on repeat offending was the focus. Crashes occurring at the same time as the first offence were also excluded for this reason. Learners and probationary drivers were excluded from the analyses because they were subject to different BAC criteria for licence suspension.

There were 146,310 drink-driving offenders in the before period and 51,331 drink-driving offenders in the after period.

### 7.2. Findings

To understand whether this sanction was effective, the first counted BAC offence committed by offenders in the study period was considered as follows:

- one offender group subject to the change (mid-range BAC - 0.10 - 0.149)
- a second offender group not subject to the change (low-range BAC - 0.001 - 0.099), and
- a final offender group that was already subject to immediate licence suspension (high-range BAC - 0.15 and over).

Table 5 illustrates the significant results for the three offender groups. The introduction of immediate suspension at 0.10 BAC and above had an effect on the group subject to the change (mid-range offenders) as well as low-range offenders. It may be that low-range offenders mistakenly thought they were subject to the sanction or that they feared the sanction and tried to avoid it.

Significant results in the period following the change were:

- Reductions in rates of drink-driving re-offending, drink-driving crashes and casualty crashes for low and mid-range BAC offenders.

- For those offenders with a mid-range first BAC offence, the reduction in the rate of casualty crashes in the after period was significantly greater than for those with a low-range first BAC offence (34% versus 21% lower).

The other significant results in the after period were:

- Reduced re-offending for low and mid-range offenders aged 16-24 and 25-49 years.
- Reduced drink-driving re-offending among low and mid-range male offenders, but an increase for high-range male offenders.
- Increased re-offending among high-range offenders but a reduction in drink-driving crashes.
- Increased re-offending among 25-49 year old drivers a high-range first drink-driving offence.

Increases in drink-driving among high-range offenders may have reflected a lack of new sanctions for this group during the study period.

**Table 5 – Percentage changes in offending and crashes by BAC offender group after introduction of immediate suspension at 0.10 BAC**

Group	Drink-driving offences	Drink-driving casualty crashes	Other casualty crashes
Subject to change (mid-range BAC offenders)			
Overall	18% ↓	50% ↓	34% ↓
Males	17% ↓		
Females	12% ↓ (not significant)		
16-24 years	32% ↓		
25-49 years	18% ↓		
50+ years	16% ↑ (not significant)		
Not subject to change (low-range offenders)			
Overall	14% ↓	44% ↓	21% ↓
Males	14% ↓		

Group	Drink-driving offences	Drink-driving casualty crashes	Other casualty crashes
Females	8% ↓ (not significant)		
16-24 years	19% ↓		
25-49 years	14% ↓		
50+ years	8% ↑ (not significant)		
Already subject to change (high-range offenders)			
Overall	25% ↑	35% ↓	10% ↓ (not significant)
Males	31% ↑		
Females	8% ↑ (not significant)		
16-24 years	6% ↑ (not significant)		
25-49 years	33% ↑		
50+ years	16% ↑ (not significant)		

All results significant unless indicated (green arrows – reductions, red arrows – increases)  
Gender and age breakdowns only analysed for offences

## 8. Characteristics of drink-drivers

### 8.1. Background

For the period 11 October 2006 to 30 September 2014 the following information was identified:

- number of drink-driving offences

- average number of drink-driving offences per year
- proportion of first time and repeat drink-drivers<sup>6</sup>
- number of other traffic offences
- average number of other traffic offences per year
- number of each licence type (e.g., probationary, full) at first offence for the total group, and for first and repeat offenders separately
- number of offenders in each licence status group (e.g., current, cancelled) (at the first offence in the period) by offenders overall, and for first and repeat offenders
- average number of all casualty crashes per year for drink-driving offenders
- the proportion of offenders who sought licence restoration following a cancellation.

## 8.2. Characteristics of drink-drivers

### 8.2.1. All drink-drivers and offending

During the eight year time period:

- 143,339 drink-driving offences were detected, committed by 118,015 offenders
- an average of 17,984 drink-driving offences were detected per year
- there was an average of 14,826 offenders per year.

This group of drink-drivers committed 704,149 other traffic offences in the time period, with an average of 88,349 per year (not necessarily at the time of the drink-driving offence). The most frequent offence type was speeding, with 53% of drink-drivers committing this offence (Table 6). The second most common offence was unauthorised driving (driving without a valid licence) (13%).

**Table 6 – Numbers, percentages, annualised average number of all traffic offence types**

Offence	Number of offences	% of drink-driving offenders	Average per year
<b>Speeding</b>	370,328	53	46,465
<b>Road use - other<sup>1</sup></b>	92,834	13	11,648
<b>Unauthorised driving</b>	92,125	13	11,559
<b>Unregistered vehicle</b>	65,117	9	8,170
<b>Disobey light/sign</b>	43,044	6	5,401
<b>Mobile phone</b>	21,090	3	2,646
<b>Seatbelt</b>	17,453	3	2,190
<b>Drug driving</b>	2,158	0.3	271

<sup>1</sup>Road use - other offences included careless driving, cross double lines, drive in a dangerous manner, drive without P-plates or L-plates, follow too closely, overtaking, etc.

<sup>6</sup> This was the proportion of offences in the time period committed by first and repeat offenders at the first offence.


### 8.2.2. Comparison of first and repeat drink-driver offending

At the time of their first offence in the study period, 96,581 were first offenders and 21,434 were repeat offenders. Taking into account further offences committed during the study period, there were 83,321 once only offenders and 34,694 repeat offenders.


There were a number of differences between first and repeat offenders (Table 7) at the time of their first offence in the study period. Repeat offenders were more likely to exhibit a number of offending behaviours than first offenders. For example:

- In raw numbers, more first offenders go on to re-offend. However, in percentage terms re-offending was more likely among repeat offenders at the start of the study (24%) than those who were first offenders (14%).
- Repeat offenders were more likely to be unlicensed or unauthorised for driving compared with first offenders.

**Table 7 – Differences between first offenders and repeat offenders (at first offence)**

Characteristic	First offender	Repeat offender (at first offence)	Significant
Re-offending more likely	14%	<b>24%</b>	
More P-Platers	<b>16%</b>	12%	NA
More unlicensed drivers	1%	<b>12%</b>	NA
More offenders unauthorised for driving	12%	<b>27%</b>	NA

NA - Difference not statistically tested (data characteristic only)

 Tested statistically (with a significant result)

Both first and repeat offenders who were detected committing a low-range first BAC offence mostly re-offended at mid or low-range.

The majority of offenders with a mid-range first BAC offence who were detected with a subsequent offence mostly offended at the mid-range level.

Finally, those who were detected committing a high-range first BAC offence mostly re-offended at mid or high-range (Table 8).

**Table 8 – Percent of first and repeat offenders by percentage at subsequent BAC offence level**

First offence BAC level	Subsequent offence BAC level	First offenders	Repeat offenders
<b>Low-range (0.001 to 0.069)</b>	Low-range	<b>44%</b>	<b>44%</b>
	Mid-range	<b>48%</b>	<b>46%</b>
	High-range	8%	10%
<b>Mid-range (0.070 to 0.149)</b>	Low-range	<b>32%</b>	<b>30%</b>
	Mid-range	<b>55%</b>	<b>54%</b>
	High-range	13%	16%
<b>High-range (0.15 and above)</b>	Low-range	16%	15%
	Mid-range	<b>41%</b>	<b>44%</b>
	High-range	<b>43%</b>	<b>41%</b>

### 8.2.3. Comparison of once only and repeat drink-driver offending

There were a number of specific differences between once only and repeat offenders (Table 9). Repeat offenders were more likely to exhibit a number of offending behaviours than once only offenders. Repeat offenders were significantly more likely to be:

- male
- a probationary driver
- aged 25 to 49
- living in regional/remote areas and in areas in the bottom 20% of social advantage
- unlicensed
- commit other traffic offences at the same time as a drink-driving offence<sup>7</sup>.

Once only drink-drivers were more likely to have committed ‘road use – other offences’ compared with repeat offenders (74% versus 62%), which included careless driving, cross double lines, drive in a dangerous manner, drive without P-plates or L-pates, follow too closely, overtaking, etc.

**Table 9 – Significant differences between once only and repeat offenders**

Characteristic	Once only offender	Repeat offender (at first or subsequent offence)
P-Platers	9%	<b>13%</b>
Male	76%	<b>86%</b>
Aged 25 to 49	55%	<b>67%</b>
Live in regional/remote areas	28%	<b>30%</b>
Reside in areas in the bottom 20% of social advantage	16%	<b>20%</b>

<sup>7</sup> Note that repeat and once only offenders were compared on each trait, e.g. for gender male versus female, for licence type – probationary versus full licence etc.



Characteristic	Once only offender	Repeat offender (at first or subsequent offence)
Unlicensed	12%	23%
Commit nearly all other traffic offences at the same time as first drink-driving offence, examples:		
Any non-drink-driving offence in conjunction with first offence	24%	43%
Unauthorised driving	15%	44%
Unregistered vehicle	10%	23%

#### 8.2.4. Crash involvement of all drink-driving offenders

During the eight year time period (11 October 2006 to 30 September 2014):

- 6,548 crashes occurred, involving 6,273 drink-driving offenders
- 3,298 were drink-driving crashes, at an average of 414 per year, and 2,662 occurred at the time of the first drink-driving offence
- nearly 3% of drink-driving offenders had one drink-driving crash (0.1% had two or more drink-driving crashes)
- 5% of drink-driving offenders had one other crash (0.2% had two or more other crashes)
- similar proportions of drink-driving offenders were involved in serious drink-driving crashes (1.3%) as were involved in minor injury drink-driving crashes (1.4%)
- offenders were usually involved in minor injury crashes (3%) and crashes at *high alcohol times* (nearly 4%)
- about 5.5 times as many offenders were involved in drink-driving crashes that occurred during high alcohol times than during *low alcohol times*
- the above patterns were similar for first and repeat offenders
- a slightly greater proportion of repeat drink-drivers were involved in crashes compared with first offenders (5.6% versus 5.3%); a higher proportion were serious crashes (2.4% versus 2.0%); and more occurred at high alcohol times (4.0% versus 3.7%)
- for all crashes, serious crashes and those occurring at high alcohol times, the highest rate of crash involvement was during the period between first offence and licence ban.

Note that the above results are descriptive only; no statistical testing was performed.

Compared with crashes involving first offenders, crashes involving repeat offenders were significantly more likely to involve:

- males (86% versus 76%)
- offenders aged 25-49 (79% versus 53.3%)
- a cancelled (3.7% versus 2.3%), disqualified (9.7% versus 1.5%), suspended (5.5% versus 3.4%) or expired licence (3.2% versus 1.3%)
- a BAC of 0.15 or above at the time of the crash (30.2% versus 21.3%).

Drink-drivers involved in crashes were significantly more likely to:

- be aged 16-24 (34% versus 26%)
- have a probationary licence at first offence (14% versus 10%)
- have a current licence at first offence (89% versus 85%)
- have a first offence BAC of 0.15 or above (30% versus 13%)
- live in regional/remote areas (33% versus 28%).

Crash involved drink-drivers were less likely to reside in areas in the top 20% of social advantage compared with non-crash involved drink-drivers (18% versus 24%).

### **8.2.5. Offender re-licensing rates**

The re-licensing rates for those who experienced a licence ban and were eligible to be re-licensed were examined at one month, six months, one year and two years after the licence ban ended. The analysis indicated:

- More than 75% were re-licensed within one month of being eligible, with approximately 3% still not re-licensed at the end of two years. This is in contrast to some previous North American research that reported approximately 50% of drink-drivers failed to reapply for a licence once eligible (Sadler & Perrine, 1984; Voas & McKnight, 1989).
- A smaller proportion of high-range BAC offenders were re-licensed by the end of two years (88% versus 97% of low-range BAC offenders) and they also re-licensed at a slower rate than low-range BAC offenders.
- A greater proportion of offenders aged 16-24 years were re-licensed (94%) compared with those aged 25-49 years (89%) or 50 years and older (87%). Drink-driving offenders aged 16-24 also re-licensed at a faster rate.
- Offenders who were unlicensed at the time of their first offence had lower re-licensing rates than those who held a current licence at the time of their first offence (80% versus 91%). The rate of re-licensing did not improve over time.
- Offenders with a subsequent drink-driving offence had lower re-licensing rates than those without a subsequent drink-driving offence (87% versus 91%).
- There were no significant differences in re-licensing rates among full and probationary licence holders, between genders, according to location or presence of convictions for other traffic offences.

## **9. Conclusions**

This study indicates that both licence bans and alcohol interlocks are effective in reducing drink-driving rates as well as improving road safety outcomes, particularly when both sanctions are being actively applied to offenders.

There is evidence of increased offending between detection of the offence and the licence ban starting. This is difficult to address, as the driver has yet to be convicted. For higher level BAC offences (0.10 or more for fully licensed drivers, 0.07 or more for P-plates or repeat offenders) police have the option of applying 'Section 51' of the Road Safety Act, suspending the driver immediately from driving when apprehended. Section 51 suspensions could be investigated for lower level offences.

Males are most likely to be repeat drink-drivers and are prone to combine the offence with additional illegal behaviours such as unlicensed driving and/or driving an unregistered vehicle.

High range BAC drink-driving offences are likely to be repeated. This finding suggests some form of alcohol misuse intervention may be warranted for this group. Intervening with lower level offenders through licence sanctions combined with alcohol interlock requirements and possibly alcohol misuse interventions also merits consideration.

## Glossary

Term	Definition
<b>Alcohol interlock</b>	<p>The alcohol interlock is a device that requires an initial breath sample before a vehicle will start. If a BAC of 0.02 or more is detected the vehicle ignition is locked out for a period of time.</p> <p>The alcohol interlock also requires the driver to take breath retests at random intervals while driving. The driver has five minutes to pull over and provide a breath sample. When a BAC of 0.02 or more is recorded, the vehicle's lights and horn will activate, if the driver does not stop and turn the vehicle off.</p>
<b>Behavioural intervention</b>	<p>Behavioural or brief interventions are designed to reduce alcohol misuse using motivational and behavioural approaches.</p>
<b>Casualty crash</b>	<p>Crashes that involve death, serious injury or other injuries (known as fatalities, serious injuries and other injuries respectively). Property damage crashes are not included.</p>
<b>Comparison group / non-interlock comparison group</b>	<p>Also known as a control group. The control group is composed of drivers who usually do not receive drink-driving sanctions (e.g. fines, licence loss, vehicle impoundment) or may receive a lesser sanction as is the case in this study for some analyses. If possible the comparison group also closely resembles the offenders in the treatment/intervention group, e.g., in terms of age, gender etc.</p> <p>The control group is compared with the intervention/treatment group to determine if the sanction or treatment had an effect. By serving as a control group, researchers are able to isolate offences and crashes and analyse the impact of sanctions on these.</p> <p>Also see offender group.</p>
<b>Drink-driving crash</b>	<p>Casualty crashes where the driver had an illegal BAC level.</p>
<b>First offender</b>	<p>In this summary, drink-drivers were classified as first offenders if they had no offence in the ten years preceding the study period under investigation. Note that the entire study had four different study periods (related to each sanction under investigation) as well as a time period for the analysis of drink-driver characteristics.</p>

Term	Definition
<b>First offence</b>	First offence refers to the first offence committed during the study time period and subsequent offence, re-offence, further offence or similar terms refer to further offences (following the first offence) during the particular study period.
<b>High alcohol times</b>	<p>Surrogate measure for BAC levels of drivers, used in crashes. It measures when people are most likely to be drinking and driving. The times are:</p> <ul style="list-style-type: none"> <li>• Monday to Thursday: Midnight to 6 am and 6 pm to midnight</li> <li>• Friday: Midnight to 6 am and 4 pm to midnight</li> <li>• Saturday: Midnight to 8 am and 2 pm to midnight</li> <li>• Sunday: Midnight to 10 am and 4 pm to midnight.</li> </ul>
<b>Interlock group</b>	The intervention/treatment group that received an alcohol interlock as the sanction. See comparison group defined earlier.
<b>Licence ban</b>	A licence ban is a sanction where a driver is not allowed to drive. A ban can be a cancellation (and the driver is disqualified from driving) or a suspension of the licence. If a driver is disqualified from driving when his/her ban ends payment must be made by the driver to re-instate the licence.
<b>Licence cancellation</b>	The driver's authority to drive has been cancelled by the court or VicRoads. The driver is then disqualified from driving or applying for a licence. At the end of the disqualification period, the driver will need to re-apply for their licence and pay the licence fee.
<b>Licence suspension</b>	The driver's authority to drive has been suspended for a fixed period. At the end of that period, the licence will automatically be re-instated.
<b>Licensing cycle</b>	<p>The licensing cycle refer to the periods investigated in the study. They are the periods:</p> <ul style="list-style-type: none"> <li>• between the offence and the start of the licence ban (pre-licence ban)</li> <li>• licence ban</li> <li>• alcohol interlock (if applicable)</li> <li>• licence re-issued</li> <li>• post-ban unlicensed period (where re-licensing was not sought).</li> </ul> <p>See Figure 2 on page 11.</p>
<b>Low alcohol times</b>	The opposite of high alcohol times. Surrogate measure for low or zero BAC levels of drivers, used in crashes.

Term	Definition
	It measures when people are least likely to be drinking and driving. The times are those not listed under high alcohol times.
<b>Offender group</b>	The intervention/treatment group. This group had particular sanctions applied to them for offending. See comparison group defined earlier.
<b>Once only offender/offence</b>	The offender only had one offence during the time period under investigation.
<b>Other traffic offence</b>	Offences that did not involve drink-driving or parking offences or any other offences not related to driving (e.g., break and enter).
<b>Other( casualty) crash</b>	Casualty crashes where the driver was not drink-driving.
<b>Repeat drink-driver/ Repeat drink-driving offender</b>	An offender who commits a second or subsequent drink-driving offence within 10 years. There are various time periods in this study. Therefore, a repeat offender could be a driver who committed a drink-driving offence up to 10 years prior to the beginning of the time period or the driver may have offended twice or more often during the actual time period under investigation.
<b>Statistically significant / Significantly / Significant</b>	<p>Statistical significance indicates the degree to which a result from a statistical test can be relied upon (is a true result).</p> <p>Statistical significance was determined by a p value of less than 0.05 or 0.01. A p value below these values suggests that the sample analysed provides enough evidence to reject the null hypothesis for the population.</p> <p>The null hypothesis means there is no difference between the intervention and comparison groups.</p>
<b>TIN</b>	Traffic Infringement Notice. The monetary fine given to drivers for an offence. This may occur via the driver being pulled over by police on the roadside or by being caught on a speed or red light camera.
<b>Unlicensed</b>	<p>Unlicensed means one of the following:</p> <ul style="list-style-type: none"> <li>• the end date of a licence cancellation or disqualification has passed and the driver has not yet obtained a new licence</li> <li>• a period of suspension has been completed and the expiry date of the licence passed during the suspension and the driver has not yet obtained a new licence</li> </ul>

Term	Definition
	<ul style="list-style-type: none"><li>• the driver never obtained a licence</li><li>• the driver was banned from driving or had an expired licence.</li></ul>

## References

- Bailey, T., Lindsay, V., & Royals, J. (2013). *Best practice in alcohol ignition interlock schemes*. Paper presented at the Australasian College of Road Safety Conference, Adelaide, Australia.
- Brown, T., Nadeau, L., Lageix, P., Lepage, M., Tremblay, J., & Seraganian, P. (2002). *Non-adherents in mandatory substance abuse evaluation following a DUI offense: their characteristics and reasons for non-compliance*. Paper presented at the Proceedings of the 16th international conference on alcohol, drugs and traffic safety.
- Boorman, M. (2012). *Victoria Police: The drink and drug driving enforcement link to public health*. Paper presented at the First International Conference on Law Enforcement and Public Health, Melbourne, Australia.
- Coroners Prevention Unit. (2013). *Presence of alcohol and drugs amongst deaths from on-road transport crashes in Victoria 2008 – 2011: Coroners Court of Victoria*.
- Elder, R. W., Voas, R., Beirness, D., Shults, R. A., Sleet, D. A., Nichols, J. L., Services, T. F., (2011). Effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes: a Community Guide systematic review. *American Journal of Preventive Medicine*, 40(3), 362-376.
- Freeman, J., Liossis, P., & David, N. (2006). Deterrence, defiance and deviance: An investigation into a group of recidivist drink drivers' self-reported offending behaviours. *Australian & New Zealand Journal of Criminology*, 39(1), 1-19.
- Hedlund, H., & McCartt, A. T. (2002). *Drunk driving in the United States. A roadmap for progress*. Paper presented at the Proceedings of the 16th International Conference on Alcohol, Drugs and Traffic Safety.
- Jones, R. K., & Lacey, J. H. (1991). *Review of the Literature Evaluating the Effect of Countermeasures to Reduce Alcohol Impaired Driving (1980-1989): Individual Analyses and Assessments*: National Highway Traffic Safety Administration.
- McArthur, D. L., & Kraus, J. F. (1999). The specific deterrence of administrative per se laws in reducing drunk driving recidivism. *American Journal of Preventive Medicine*, 16(1), 68-75.
- Nichais, J., & Ross, H. (1991). The effectiveness of legal sanctions in dealing with drinking drivers. *Journal of Safety Research*, 22(2), 117.
- Peck, R. C. (1991). The general and specific deterrent effects of DUI sanctions: A review of California's experience. *Alcohol, Drugs & Driving*.
- Ross, H. (1992). Are DWI sanctions effective? *Alcohol, Drugs and Driving*, 8(HS-041 390).
- Sadler, D., & Perrine, M. (1984). *An evaluation of the California drunk driving countermeasure system, volume 2: the long term traffic safety impact of a pilot alcohol abuse treatment as an alternative to license suspensions*. Sacramento: California Department of Motor Vehicles.
- Voas, R. B., & McKnight, A. (1989). *An Evaluation of Hardship Licensing for DWI's*. Contract No. DTNH22-34-C-07292). Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration.



Willis, C., Lybrand, S., & Bellamy, N. (2004). Alcohol ignition interlock programmes for reducing drink driving recidivism. *The Cochrane Library*.

## Appendix A – History of drink-driving countermeasures

Table A 1 – Drink-driving sanctions introduced in Victoria by date

Date	Countermeasure
<b>1/1/1961</b>	Breathalysers were introduced to provide objective evidence in driving under the influence cases.
<b>1/12/1966</b>	Victoria introduced a BAC limit of 0.05 for driving under the influence and being drunk in charge of a motor vehicle. Note that this rule was legislated on 7 December 1965.
<b>1/6/1976</b>	<p>Victoria Police were given the power to stop vehicles ‘at random’ at designated preliminary breath test stations.</p> <p>Prior to 1974 the police could only require a sample breath test if the car was involved in a crash or the police had reason to believe that the person in charge of the car had consumed intoxicating liquor.</p> <p>In 1974 a provision was introduced that required a medical practitioner to take a sample of blood if a person was taken to hospital as a result of a motor car accident.</p>
<b>22/5/1984</b>	Zero BAC introduced for learner permit holders, those in the first year of a probationary licence and unlicensed drivers.
<b>1/3/1987</b>	<p>Immediate licence suspension at 0.15 BAC and above introduced. Zero BAC extended to cover the full probationary period.</p> <p>In addition, Victoria Police were given the power to breath test any person found driving a vehicle and suspend a licence on the spot, until the case is heard in court where a BAC is 0.15 or more.</p>
<b>1/10/1990</b>	Introduction of the requirements for repeat offenders to undertake a drink-driving education course and return to a probationary licence.
<b>1/1/1992</b>	Zero BAC for commercial drivers - for drivers of all buses and trucks (over 15 tonnes GVM).
<b>14/12/1993</b>	Z condition introduced. This replaced the need for full licence holders to be given a probationary licence after a drink drive offence.
<b>1/8/1994</b>	New drink-drive re-licensing legislation affecting fully licensed drivers introduced. This allowed drink-driving offenders on a probationary licence to obtain a full licence with a Z (zero BAC) condition.
<b>28/6/2001</b>	It became illegal to drive at 0.05 BAC or above (previously it was over 0.05).

Date	Countermeasure
21/12/2001	Victoria Police now have the option to issue a <a href="#">Traffic Infringement Notice (TIN)</a> rather than referring the matter to court. Licence cancellation (TIN) for drink-driving offence < 0.15 was also introduced. If a licence holder is subject to a BAC of zero and records a BAC reading between > 0.05 and < 0.15, he/she will incur a six month cancellation. Similarly, if the licence holder is subject to 0.05 and records a BAC reading between > 0.07 and < 0.15, he/she will incur a six month licence cancellation.
21/12/2001	0.07 BAC became the lower limit for mandatory licence cancellation. Prior legislation allowed courts the discretion to not cancel/suspend a licence of an offender who had a BAC reading from 0.05 to 0.0099 (any reading of 0.10 and above incurred an automatic cancellation). Legislation was changed to reduce the limit to 0.07 BAC and above at which mandatory licence cancellation must occur.
21/12/2001	Ten demerit points for drink-drive offences introduced. If the licence holder is subject to a BAC of zero and records a BAC reading between 0.00 and < 0.05, he/she will incur 10 demerit points. Similarly, if the licence holder is subject to 0.05 and records a reading between $\geq 0.05$ and < 0.07, he/she will also incur 10 demerit points.
21/12/2001	Police now have option to issue a TIN rather than referring the matter to court, therefore providing licence cancellation (TIN) for a drink-driving offence for < 0.15. If a licence holder is subject to a BAC of zero and records a BAC reading between > 0.05 and < 0.15, he/she will incur a 6 month cancellation. Similarly, if the licence holder is subject to 0.05 and records a BAC reading between > 0.07 and < 0.15, he/she will incur a 6 month cancellation.
21/12/2001	New motorcyclists, who have a full licence but are issued a restricted motorcycle licence from 22 December 2001 onwards, must ride with a BAC of zero. A restricted licence is given to those motorcyclists who have already completed their probationary period on a car licence.
13/5/2002	Alcohol interlock legislation was introduced. The driver requires an ICRO (interlock condition removal order) to remove the alcohol interlock. The court issues the alcohol interlock order. Note that alcohol interlocks were only actively applied from 13 May 2003.
15/12/2002	As part of the Responsible Driving Bill, 'on the spot' licence suspension was introduced for all first offenders with a BAC of 0.15 or more, all first offenders who are probationers or learners with a BAC of 0.07 or more and all repeat offenders. Suspensions can be issued by the Police, or by a court hearing any proceedings relating to the case. On the spot suspensions cannot last longer than the minimum suspension which a court could impose if the driver is found guilty. Periods of interim suspension will be discounted from any disqualification period subsequently imposed by a court.
01/12/2003	Ten demerit points introduced for drink-drive offences where the licence or permit was not cancelled.

Date	Countermeasure
11/10/2006	Increased penalties for drink-drivers and expanded alcohol interlock requirements (Appendix B).
1/1/2007	Alcohol interlocks apply to all probationary drivers and to all persons under the age of 26 for 0.07 to less than 0.10 BAC.
17/6/2009	Increase in maximum court fine for drink-drive offences from 12 to 20 penalty units.
1/10/2009	Immediate suspension of licence for drivers at BAC of 0.10. Therefore the previous threshold for immediate licence suspension decreased from 0.15 BAC to 0.10 BAC, in the case of a person who holds a full licence. The immediate licence suspension threshold for learners and probationary drivers remains at 0.07 BAC.
01/07/2011	Vehicle impoundment for repeat drink-driving (with a BAC of 0.10 or more).
13/12/2012	New offence introduced for drinking an alcoholic drink while driving (or while instructing a learner driver).
1/10/2014	<p>VicRoads expands mandatory alcohol interlocks upon re-licensing to a broader group of drink-drivers:</p> <ul style="list-style-type: none"> <li>○ every first offender who has a probationary licence, learner permit or restricted motorcycle licence</li> <li>○ other drivers who have a BAC of 0.07 to 0.15</li> <li>○ drivers with a BAC under 0.07 whose licences are cancelled, including professional drivers of buses, taxis and vehicles over 15 tonnes and novice motorcycle riders who are subject to a zero BAC limit</li> <li>○ all repeat offenders with a BAC reading under 0.07</li> <li>○ serious alcohol-related vehicle offences under the Sentencing Act 1991, including first offences.</li> </ul>

## Appendix B – Increased penalties for drink-drivers and expanded alcohol interlock requirements introduced on 11 October 2006

Table B 1 – Maximum penalties for repeat drink-driving offences October 2006

Offence	Existing Penalty	New Penalty
<b>Second drink-driving offence – with BAC less than 0.15</b>	Fine of 25 penalty units or 3 months imprisonment	Fine of 60 penalty units or 6 months imprisonment
<b>Second drink-driving offence – with BAC of 0.15 or more</b>	Fine of 25 penalty units or 3 months imprisonment	Fine of 120 penalty units or 12 months imprisonment
<b>Third or later drink-driving offence – driving with BAC less than 0.15</b>	Fine of 25 penalty units or 3 months imprisonment	Fine of 120 penalty units 12 months imprisonment
<b>Third or later drink-driving offence – driving with BAC of 0.15 or more</b>	Fine of 25 penalty units or 3 months imprisonment	Fine of 180 penalty units or 18 months imprisonment

Table B 2 – Offences for alcohol interlocks October 2006

Type of offence	First offence	Second offence	Third or subsequent offence
<b>BAC less than 0.07</b>	N/A	<i>Previous</i> – Mandatory minimum of 6 months <i>New</i> – Mandatory minimum of 12 months	<i>Previous</i> – Mandatory minimum of 3 years <i>New</i> – Mandatory minimum of 4 years
<b>BAC of more than 0.07 and less than 0.15</b>	<i>Previous</i> – N/A <i>New</i> – <u>Discretionary</u> minimum of 6 months if aged 26 or more <u>and</u> on full licence; and <u>Mandatory</u> minimum of 6	<i>Previous</i> – Mandatory minimum of 6 months <i>New</i> – Mandatory minimum of 12 months	<i>Previous</i> – Mandatory minimum of 3 years <i>New</i> – Mandatory minimum of 4 years

Type of offence	First offence	Second offence	Third or subsequent offence
	months if aged 25 or less <u>or</u> on probationary licence		
<b>Driving under the influence</b> <b>Refuse test BAC of 0.15 or more</b> <b>Repeat offenders under the Sentencing Act e.g. culpable driving</b>	<i>Previous – <u>Discretionary</u> minimum of 6 months</i> <i>New– <u>Mandatory</u> minimum of 6 months</i>	<i>Previous – Mandatory minimum of 3 years</i> <i>New – Mandatory minimum of 4 years</i>	<i>Previous – Mandatory minimum of 3 years</i> <i>New – Mandatory minimum of 4 years</i>