Synthesis title:

Drink Driving

Category: Drivers

Other Relevant Topics:

- Drug Driving (Drivers)
- Speed (Drivers)
- Young Drivers (Drivers)
- Uninsured and Unlicensed (Drivers)
- Convictions and Violations (Compliance and the Law)
- Type Approval (Compliance and the Law)

Keywords:

Drink driving, Alcohol, Casualties, Offenders, Risk, Driver rehabilitation, Alcohol ignition interlocks, Blood alcohol limits

About the Road Safety Observatory

The Road Safety Observatory aims to provide free and easy access to independent road safety research and information for anyone working in road safety and for members of the public. It provides summaries and reviews of research on a wide range of road safety issues, along with links to original road safety research reports.

The Road Safety Observatory was created as consultations with relevant parties uncovered a strong demand for easier access to road safety research and information in a format that can be understood by both the public and professionals. This is important for identifying the casualty reduction benefits of different interventions, covering engineering programmes on infrastructure and vehicles, educational material, enforcement and the development of new policy measures.

The Road Safety Observatory was designed and developed by an Independent Programme Board consisting of key road safety organisations, including:

- Department for Transport
- The Royal Society for the Prevention of Accidents (RoSPA)
- Road Safety GB
- Parliamentary Advisory Council for Transport Safety (PACTS)
- RoadSafe
- RAC Foundation

By bringing together many of the key road safety governmental and non-governmental organisations, the Observatory hopes to provide one coherent view of key road safety evidence.

The Observatory originally existed as a standalone website, but is now an information hub on the RoSPA website which we hope makes it easy for anyone to access comprehensive reviews of road safety topics.

All of the research reviews produced for the original Road Safety Observatory were submitted to an Evidence Review Panel (which was independent of the programme Board), which reviewed and approved all the research material before it was published to ensure that the Key Facts, Summaries and Research Findings truly reflected the messages in underlying research, including where there may have been contradictions. The Panel also ensured that the papers were free from bias and independent of Government policies or the policies of the individual organisations on the Programme Board.

The Programme Board is not liable for the content of these reviews. The reviews are intended to be free from bias and independent of Government policies and the policies of the individual organisations on the Programme Board. Therefore, they may not always represent the views of all the individual organisations that comprise the Programme Board.

Please be aware that the Road Safety Observatory is not currently being updated; the research and information you will read throughout this paper has not been updated since 2017. If you have any enquiries about the Road Safety Observatory or road safety in general, please contact **help@rospa.com** or call **0121 248 2000**.

How do I use this paper?

This paper consists of an extensive evidence review of key research and information around a key road safety topic. The paper is split into sections to make it easy to find the level of detail you require. The sections are as follows:

Key Facts	A small number of bullet points providing the key facts about the topic, extracted from the findings of the full research review.
Summary	A short discussion of the key aspects of the topic to be aware of, research findings from the review, and how any pertinent issues can be tackled.
Methodology	A description of how the review was put together, including the dates during which the research was compiled, the search terms used to find relevant research papers, and the selection criteria used.
Key Statistics	A range of the most important figures surrounding the topic.
Research Findings	A large number of summaries of key research findings, split into relevant subtopics.
References	A list of all the research reports on which the review has been based. It includes the title, author(s), date, methodology, objectives and key findings of each report, plus a hyperlink to the report itself on its external website.

The programme board would like to extend its warm thanks and appreciation to the many people who contributed to the development of the project, including the individuals and organisations who participated in the initial consultations in 2010.

Key Facts

- It is well documented that the risk of road traffic injury and collision increases rapidly with alcohol consumption. Drivers with a blood alcohol concentration (BAC) between 20mg alcohol per 100ml blood (20mg/100ml) and 50mg/100ml have at least a 3 times greater risk of dying in a crash. This risk increases to at least six times with a BAC between 50mg/100ml and 80mg/100ml, and to 11 times with a BAC between 80mg/100ml and 100mg/100ml.

- In 2015, 200 people were killed in drink drive accidents in Great Britain, 12 per cent of all deaths in reported road accidents that year. This was a decrease of 40 from the previous year, although this was not statistically significant. 1,170 people were seriously injured in drink drive accidents, a 9% increase from 2014, which was statistically significant. The total number of casualties in drink drive accidents in 2015 was 8,470, 3% more than in 2014. (Final Estimates for Accidents Involving Illegal Alcohol Levels: 2015, DfT, 2017)

- Young car drivers (aged 17-24) had more drink drive accidents per 100 thousand licence holders and per billion miles driven than any other age group, and the rate declines with age.

- Women are less likely than men to be involved or injured in drink-drive accidents. Most convicted drink drivers are men, however the proportion of women convicted for drink drive offences is rising.

Summary

- Driving after drinking alcohol is a major cause of death and injury on the roads. Alcohol impairs many of the functions necessary for safe driving, for example decreasing motor skills and reducing reaction time.

- There have been sustained enforcement and education efforts in the UK to prevent drink driving. Alongside these efforts, there has been a substantial decline in the number of alcohol-related deaths and injuries since the late 1970s.

- The majority of people now consider drink driving to be socially unacceptable, and self-report surveys consistently demonstrate that drink driving is a major road safety concern for respondents.

- However, despite the enforcement and education efforts, a significant minority of individuals continue to drive when impaired by alcohol, whether above or below the prescribed limit.

- It is well documented that the risk of road traffic injury and collision increases rapidly with alcohol consumption. Drivers with a blood alcohol concentration (BAC) between 20mg alcohol per 100ml blood (20mg/100ml) and 50mg/100ml have at least a 3 times greater risk of dying in a crash. This risk increases to at least six times with a BAC between 50mg/100ml and 80mg/100ml, and to 11 times with a BAC between 80mg/100ml and 100mg/100ml.

- In 2015, 200 people were killed in drink drive accidents in Great Britain, 12 per cent of all deaths in reported road accidents that year. This was a decrease of 40 from the previous year, although this was not statistically significant. 1,170 people were seriously injured in drink drive accidents, a 9% increase from 2014, which was statistically significant. The total number of casualties in drink drive accidents in 2015 was 8,470, 3% more than in 2014. (Final Estimates for Accidents Involving Illegal Alcohol Levels: 2015, DfT, 2017)

- Young car drivers are more at risk of crash and injury after drinking than older drivers, most likely due to inexperience and lower tolerance to alcohol. Young car drivers (aged 17-24) had more drink drive accidents per 100 thousand licence holders and per billion miles driven than any other age group, and the rate declines with age.

- Women are less likely than men to be involved or injured in drink-drive accidents. Most convicted drink drivers are men, however the proportion of women convicted for drink drive offences is rising.

- Various measures have been successful in reducing drink driving including drink drive laws and penalties, media and campaigns, and remedial education. The extent of the success of these measures is dependent on many factors, and a combination of measures is likely to be most effective in reducing drink driving.

Methodology

A detailed description of the methodology used to produce this review is provided in the Methodology section of the Observatory website at http://www.roadsafetyobservatory.com/Introduction/Methods .

This synthesis was compiled during February-March 2013. The reported road casualty data has been updated with 2015 figures, based on "Reported Road Casualties in Great Britain: Estimates for Accidents Involving Illegal Alcohol Levels: 2015, (final)" (DfT, 2017)

Searches were carried out on the pre-defined sources identified in the methodology section. Search terms used to identify relevant papers included: alcohol, drink, driving, road safety, risk, accident, high risk offender, alcolock, drink drive rehabilitation, campaigns.

Forty-two pieces of research, statistical reports or policy documents have been included in this review.

Reported Road Casualties Great Britain (Department for Transport) presents an analysis of reported drinking and driving accidents and the casualties involved.

For the purposes of the analysis, a drink drive accident is defined as being an incident on a public road in which someone is killed or injured and where one or more of the motor vehicle drivers or riders involved either refused to give a breath test specimen when requested to do so by the police, failed a roadside breath test, or died and was subsequently found to have more than 80mg alcohol per 100ml of blood

Key Statistics

The current legal provisions concerning drink driving are contained in sections 4-11 of the Road Traffic Act 1988, and can be summarised as:

- Driving, attempting to drive, or being in charge of a mechanically propelled vehicle on a road or other public place whilst unfit to drive through drink or drugs.
- Driving, attempting to drive, or being in charge of a motor vehicle with excess alcohol levels (exceeding the prescribed limit).
- Failing to provide a specimen for a breath test or specimens for analysis and failing to permit a specimen of blood to be tested in a laboratory.

In the UK, the prescribed limit is 80mg alcohol per 100ml blood (80mg/100ml). This is equivalent to a limit in breath of 35µg alcohol per 100ml breath, or a limit in urine of 107mg alcohol per 100ml urine.

Penalties for driving, or attempting to drive, above the legal limit include a minimum disqualification of 12 months, a fine of up to £5000, and a possible prison term of up to 6 months.

Drink driving casualties in context

- In 2015, 200 people were killed in drink drive accidents in Great Britain, 12 per cent of all deaths in reported road accidents that year. This was a decrease of 40 from the previous year, although this was not statistically significant.

- 1,170 people were seriously injured in drink drive accidents, a 9% increase from 2014, which was statistically significant.

- The total number of casualties in drink drive accidents in 2015 was 8,470, 3% more than in 2014. (DfT, 2017)

- Coroner's data indicates that for reported fatalities aged 16 or over in 2010:
    - 24 per cent of all driver fatalities had over 50mg alcohol per 100ml blood;
    - 23 per cent of all driver fatalities had over 80mg/100ml;
    - And 15 per cent of all driver fatalities had over 150mg/100ml.
    - 10 per cent of all rider fatalities had over 50ml alcohol per 100ml blood;
    - 8 per cent of all rider fatalities had over 80mg/100ml;
    - And 7 per cent of all rider fatalities had over 150mg/100ml.

  (Reported Road Casualties Great Britain: 2011 Annual Report, 2012)

Trends in drink driving over time

Drink drive accidents and casualties have been declining since 2002, but 2011 data has shown an increase compared to 2010.

- Compared to 2010, provisional data for 2011 shows:
  - A 2 per cent increase in all drink drive accidents (from 6,630 to 6,730), and an 18 per cent increase in fatal accidents (from 220 to 260).
  - A 12 per cent increase in the number of fatal casualties (from 250 to 280), and a 5 per cent increase in the number of Killed and Seriously Injured (KSI) casualties (from 1,500 to 1,570). The 2010 KSI figure of 1,500 was the lowest recorded since the statistic series began, and less than a sixth of the 1979 figure.
- The number of KSI drink drive casualties was declining gradually between 2002 and 2010. The recent increase in casualties observed in 2011 is likely to be related to the adverse weather conditions (heavy snow falls) in the first and last quarters of 2010 but not in 2011.
- Young drivers (17-24 years old) killed or seriously injured over the alcohol limit have fallen by almost half between 2006 (301) and 2010 (156).

  (Reported Road Casualties Great Britain: 2011 Annual Report, 2012)

Breath tests

- During 2010, approximately 733,088 screening breath tests were carried out by police officers (for involvement in an accident, a moving traffic offence, or suspicion of alcohol use). This is ten per cent lower than in 2009.
- The number of positive or refused tests also decreased by ten per cent, from 93,232 in 2009 to 83,932 in 2010.
- Eleven per cent of all breath tests in 2010 were either refused or gave a positive result (similarly to 2009).

  (Police Powers and Procedures England and Wales 2010/11, 2012)

- In 2011, the breath testing rate at injury road accidents was 54 per cent. The proportion of drivers/riders failing breath tests was 3.1 per cent. The number of drivers/riders failing a breath test as a proportion of all involved in accidents was 1.7 per cent. The rates for men and women were 2.5 and 1.1 per cent respectively.

  (Reported Road Casualties GB: 2011 Annual Report, 2012)

Note

This review includes statistics from Reported Road Casualties Great Britain 2011, which were the latest available data when the review was written. More recent statistics are available in Reported Road Casualties Great Britain 2013 and Reported Road Casualties Great Britain 2014 and on "Reported Road Casualties in Great Britain: Estimates for Accidents Involving Illegal Alcohol Levels: 2015, (final)".

Convictions for drink driving

- There were approximately 54,900 findings of guilt at courts for 'driving etc. after consuming alcohol or taking drugs' in 2011 in England and Wales. This figure has been decreasing year on year since 2004 when approximately 96,200 findings of guilt were recorded.
- In 2011, 84 per cent of the guilty findings were in men; this is a decrease from 88 per cent of the findings being in men in 2005 and 2006.
- In 2011, 8 per cent of the guilty findings were in those aged under 21, a decrease from 12 per cent of the findings being in this age group between 2005 and 2008.

(Criminal Justice Statistics in England and Wales 2011, 2013)

Extent of drink driving

Prevalence of drinking and driving can be estimated through roadside surveys of drivers, or self-report surveys. The last roadside survey of drinking and driving in the UK was conducted in 1998 and 1999 (reviewed in Jackson (2008) and Maycock (1997)). This survey estimated a prevalence of driving in excess of the prescribed alcohol limit of approximately 1% across the general population at the times covered by the survey (weekend evenings).

Self-report surveys estimate that between approximately 3 and 8 per cent of drivers admit to driving over the legal alcohol limit in the last year, although this figure varies depending on the age and sex of the respondents. Surveys estimate that between 20 and 40 per cent of drivers report driving within a few hours of drinking alcohol in the past 12 months (but not necessarily over the limit). Hopkin et al (2010) provide a detailed and comprehensive review of self-reported prevalence of drink driving.

- In 2010/11, an estimated 8 per cent of adult drivers who had consumed alcohol in the last year reported driving at least once or twice within the last 12 months whilst they thought they were over the legal alcohol limit.

(Reported Road Casualties Great Britain: 2011 Annual Report, 2012)

- The DfT THINK! campaign serves to promote publicity and education regarding road safety issues. In their annual survey conducted in 2011:
    - Eight per cent of motorists admitted to driving when unsure if they were over the legal alcohol limit. This was down from 14 per cent in 2007 and at lowest since THINK! tracking began.
    - Three per cent of motorists admitted to driving when they thought they were over the legal alcohol limit (down from 6 per cent in 2007 and at lowest since THINK! Tracking began).

(THINK! Annual Survey 2011, 2012)

- An online survey of motorists reported that, in 2012:
    - 7 per cent drove knowing or believing they were over the limit shortly after having a drink over the last year, and 6 per cent reported doing so 'the morning after'.
    - 14 per cent of 17-24 year olds admitted to knowing or believing they had driven under the influence the morning after drinking.

(RAC Report on Motoring 2012, 2012)

- In 2010, 36 per cent of drivers reported having driven after drinking one or two alcoholic drinks in the last 12 months. Seven per cent of drivers had driven at least once or twice in the last 12 months when they thought that they were over the legal limit.

(Lee and Humphrey, 2011)

- In a 2002 omnibus survey of drivers, 12 per cent admitted to driving in the previous year when they thought they were over the legal alcohol limit. Of these, 18 per cent admitted driving when they thought they were over the limit once a month or more.
- Of all drivers questioned, 44 per cent admitted to driving after drinking some alcohol.

(Brasnett, 2004)

The influence of age and gender

Road casualty statistics indicate that younger drivers are more likely to be involved in drink drive accidents than older drivers. They also demonstrate that men are more likely to be involved in drink drive accidents as drivers, and are more likely to be killed or seriously injured in drink drive accidents, than women. However, looking at the evidence (casualty, breath test, and offence data) over time suggests that the proportion of drink drivers who are female is increasing.

- In 2011, provisional data estimates that within the 20-29 year age group, 42 per cent of drivers killed in reported road accidents were over the legal alcohol limit. This falls to 25 per cent for the 30-39 year age group, and 11 per cent for the 40+ age group.
- Of the drivers/riders killed in reported accidents in 2010:
    - Those aged 25-29 years old had the highest proportion of killed drivers/riders over the legal alcohol limit (31 per cent), followed by 35-39 year olds (28 per cent).
    - Those aged 60 years and over had the highest proportion of killed drivers/riders with no alcohol present in their blood (91 per cent).
- In 2010, car drivers aged under 30 were most likely to be involved in drink drive accidents.
    - Young car drivers (aged 17-24) had more drink drive accidents per 100 thousand licence holders and per billion miles driven than any other age group in 2010.

(Reported Road Casualties Great Britain: 2011 Annual Report, 2012)

- A review of evidence highlighted that younger drivers are particularly at risk of crashing after drinking alcohol, whatever their blood alcohol level, due to inexperience and lower tolerance to alcohol.

(Killoran et al, 2010)

- There was a 41 per cent fall in male court convictions for drink/drug driving between 2003 and 2010, but only a 7 per cent corresponding fall for women in the same period.
- For drivers over the age of 30, and when controlling for mileage driven, proportionately more females fail a breath test after a collision than males.

(Beuret et al, 2012)

Self-report survey evidence also indicates that men are more likely to report drink driving than women, and younger drivers are more likely to drink drive than older drivers, and this pattern has been shown for some years. However, research that has differentiated between 'driving after drinking' (i.e. when consumed alcohol but thought to be under the limit) and 'drink driving' (i.e. when thought to be over the limit), suggests that 'driving after drinking' is more prevalent amongst the older age groups.

- Males were twice as likely to report driving whilst thinking they were over the legal alcohol limit than females (10 per cent versus 4 per cent in 2010/11). Those aged 16-19 years were slightly more likely to report driving whilst thinking they were over the limit than older age groups (10 per cent versus 7 per cent in those aged 30-59 years).

(Reported Road Casualties Great Britain: 2011 Annual Report, 2012)

- Men were more likely to report driving after one or two drinks at least once or twice in the last 12 months (44 per cent) than women (27 per cent). Men were also more likely to admit to driving when they thought they were over the legal limit (9 per cent compared with 4 per cent of women).
- Those most likely to report driving after one or two drinks were those aged 65 years or more (46 per cent).

(Lee and Humphrey, 2011)

- Men aged 16-29 were most likely to drive when they thought they were over the limit; 26 per cent admitted doing so in the previous year.
- Men aged 30-59 were most likely to have driven after drinking an amount they believed was under the legal limit.

(Brasnett, 2004)

When does drink driving occur?

- In 2010, 65 per cent of all drink drive accidents occurred on a Friday, Saturday or Sunday, with more than two-fifths of these occurring during the hours of 9pm to 3am.
- Coroner's data indicate that, in 2010, over half of drivers killed between 10pm and 4am were over the limit.

(Reported Road Casualties Great Britain: 2011 Annual Report, 2012)

- In 2010, the proportion of breath tests that resulted in a positive reading (or were refused) was lowest in June (7 per cent) and December (5 per cent), coinciding with police enforcement campaigns. For the remainder of the year, the proportion resulting in positive or refused readings ranged between 11 and 16 per cent (April / May / August / October highest).

(Police Powers and Procedures England and Wales 2010/11, 2012)

Surveys have asked further questions of those who admit to drink driving to try to gain further understanding of when and where drink driving occur.

- In a small sample of respondents (n=70) who admitted to driving when they thought they were over the legal alcohol limit in the last year:
  - The most likely place of drinking before driving (when thought to be over the legal limit) was a pub or pubs (51 per cent, 30 respondents), followed by drinking at someone else's home (28 per cent, 21 respondents).
  - The majority of drink drive journeys were reported to be less than five miles (78 per cent, 54 respondents). When asked why they drove on this occasion, the most popular answers given by the respondents were that 'Thought I was under the legal drink drive limit at the time' (65 per cent, 43 respondents) and that 'I felt safe to drive' (61 per cent, 43 respondents), followed by 'No other means of transport available' (22 per cent, 16 respondents).

(Lee and Humphrey, 2011)

Attitudes towards drink driving

Survey respondents commonly report that driving after drinking alcohol is one of the most common causes of road accidents and that 'drink driving' is one of the most important road safety issues to be addressed by the Government. Similarly, surveys have shown that respondents consistently rate driving when over the legal alcohol limit to be a dangerous behaviour.

- In 2010, 62 per cent of respondents selected 'drink driving' in their 'top three' most important issues to be addressed by the government. 'Drink driving' was the most frequently mentioned issue.
- In 2010, 74 per cent of respondents agreed that drivers should not drink any alcohol before driving.

(Lee and Humphrey, 2011)

- In 2011, 71 per cent of respondents selected ‘drink driving’ in their top 3 most important issues that the Government should address to improve road safety.
- In 2011, 87 per cent of respondents agreed that driving when over the legal alcohol limit was dangerous. Eighty-two per cent agreed that driving when unsure whether you are over the legal alcohol limit was dangerous.

(THINK! Annual Survey 2011, 2012)

- In 2011, 86 per cent of respondents agreed with the statement “If someone has drunk any alcohol they should not drive”. Seventy-seven per cent agreed with the statement “Most people don’t know how much alcohol they can drink before being over the legal drink drive limit”.

(British Social Attitudes Survey 2011, 2012)

High risk offenders and re-offending

The High Risk Offender scheme was introduced in 1983 (and revised in 1991) to provide a means of dealing with drivers whose persistent misuse of, or dependence on, alcohol presents a serious risk to road safety. A High Risk Offender (HRO) is defined as:

- A driver who has been disqualified once for drink driving with an alcohol level at, or above, two and a half times the legal limit.
- A driver who has been disqualified twice within a 10-year period for any drink driving offence.
- A driver who has been disqualified for failing, without reasonable cause, to provide a breath, blood, or urine, sample for analysis.

For offenders who have been convicted at two and a half times the legal limit, Sentencing Guidelines provide that conviction should carry a disqualification from driving of between 3-5 years. For offenders who have been disqualified twice, the statutory minimum disqualification period is 3 years.

Following disqualification, a high risk offender must undergo a medical examination to assess whether they are physically or psychologically dependent on alcohol before they can apply for their licence to be returned.

- Analysis of data from drivers who were convicted for drink driving in 1995 show that:
    - For all HROs, 11.5 per cent of male HROs and 6.1 per cent of female HROs were convicted for further drink drive offences within 4 years of the original conviction. This was compared to 1.0 per cent of male non-HRO drink drive offenders and 0.3 per cent of female non-HRO drink drive offenders.
    - The proportion of re-offending drivers was higher among HROs with previous convictions than those without.
    - The re-offending rate decreases markedly with age amongst all drink drive offenders.

- The data suggests that many convicted drink drivers continue to re-offend irrespective of the disqualification that follows their conviction.

(Broughton, 2002)

- Analysis of data from drivers convicted for drink driving in 1996 and 1999 show that:
  - HROs who have been convicted of drink driving with a blood alcohol concentration (BAC) at or above two and a half times the legal limit, and who have no earlier convictions for drink driving, have a similar offending history to first time non-HRO drink drivers. Motor and criminal re-offending for these two groups is also similar.
  - Those offenders who have committed two drink drive offences within 3 years, and particularly those who refuse to give a sample for analysis after their second offence, are more likely to have committed a greater number of offences prior to becoming an HRO. This group is also more likely to re-offend.
  - All the groups of drink drive offenders studied were sentenced to fewer motoring and criminal offences in the 3 years after the reference offence than in the 3 years before.
  - It is difficult to separate the effects of aging from the effects of the HRO scheme on re-offending. There was no clear evidence that becoming an HRO produced the decrease in re-offending following conviction.

(Davies and Broughton, 2002)

- Actual one-year re-offending rate for those originally convicted of drink driving offences was 16.8 per cent in 2008 (in a sample of 3,800 offenders). NB. Re-offending offence not necessarily in the same category as the original offence.
- For those offenders originally convicted of drink driving offences, 15 per cent of re-offences during the one-year follow up period related to drink driving.
- Analysis of the cohort used in the 2004 re-offending analysis showed:
  - Actual 2-year re-offending was highest in those aged 18-20 years old (48.2 per cent), and lowest in those aged 35+ (24.3 per cent). NB. Re-offending offence not necessarily in the same category as the original offence.
  - The cohort was predominately male (90 per cent); of the men, 34 per cent were aged 25-34 years and 46 per cent were aged 35+. Of the women, 56 per cent were aged 35+.

(HO/MoJ Statistical Bulletins, 2007/2010)

Social background

Many studies have examined the effect of social background on levels of drink driving. More recent self-report data suggests drink driving is spread across all social grades, with slightly reduced prevalence in the lower social grades; this is in contrast to earlier data reporting over-representation of lower social grades in drink drive accidents.

- The respondents in managerial and professional occupations were more likely to say that they had driven after one or two drinks at least once or twice in the last 12 months (44 per cent) than those in routine and manual occupations (28 per cent).
- Drivers in the highest income quintile were also more likely to say that they had driven when they had drunk over the legal limit at least once or twice in the last 12 months (14 per cent) compared with other income groups.

(Lee and Humphrey, 2011)

- Results from a literature review indicated that driving after drinking is more prevalent among social grade AB and lowest among social grade DE, while levels of drink driving are similar across all social grades except social grade DE which has the lowest levels.

(Hopkin et al, 2010)

- Drivers in the more affluent areas and in occupation groups AB and C1 (managerial, professional and administrative) tend to be under-represented in the drink drive accidents and in the High Risk Offender scheme, whilst those in less well-off areas and in occupational groups C2 (skilled manual workers) and DE (semi-skilled and unskilled manual workers and the unemployed) tend to be over-represented.

(Maycock, 1997)

Alcohol consumption

Alcohol consumption in the general population is monitored by several household social surveys, and some key findings and trends are given below. The surveys note the difficulty of accurately measuring alcohol consumption via self-report methods, either because of genuine difficulties with accurate recall or underestimation of alcohol consumption because of social desirability bias (a high amount of drinking is considered unfavourable). Also, alongside many pub closures over the last few years and a period of recession, evidence suggests drinking in the home has become more commonplace, which may also make it more difficult to measure consumption (drinks not measured out as precisely).

The various measures utilised by social surveys generally indicate that men drink alcohol more frequently and more heavily than women; that older age groups tend to drink more frequently than younger age groups, but drink smaller amounts; and that younger age groups drink on less occasions than older age groups but will drink more heavily.

- Between 2005 and 2010 average weekly alcohol consumption decreased from 14.3 units to 11.5 units per adult. Among men average alcohol consumption decreased from 19.9 units to 15.9 units a week and for women from 9.4 units to 7.6 units a week.
- The proportion of men drinking more than 21 units a week fell from 31 per cent in 2005 to 26 per cent in 2010. The proportion of women drinking more than 14 units a week fell from 21 per cent to 17 per cent over the same period. These decreases were mainly driven by falls in those aged between 16-44 years old.
- The proportion of men drinking more than 8 units on their heaviest drinking day in the week before interview fell from 23 per cent in 2005 to 19 per cent in 2010.

(General Lifestyle Survey, 2012)

The Health Survey for England presents similar estimates of average weekly alcohol consumption, but a decrease in heavy consumption is evident only for females.

- In 2011, average weekly consumption was 17.2 units for men and 9.4 units for women. Men aged between 55 and 64 and women aged between 45 and 54 drank more than those in other age groups (19.4 and 11.6 units respectively).
- The proportion of men consuming more than 4 units on the heaviest day's drinking in the last week did not show substantial change between 2006 and 2011 (39 per cent in 2011), and similarly the proportion of men that drank more than twice the recommended amount showed little change over the period (22 per cent in 2011).
- For women, there was a decrease between 2006 and 2011 both in the proportion consuming more than three units on the heaviest day's drinking last week (from 33 per cent to 28 per cent), and in the proportion drinking more than twice the recommended amount (from 16 per cent to 13 per cent).

(Health Survey for England, 2012)

HMRC data shows that total alcohol clearances per adult peaked in 2004/5 and has decreased slightly over the years since (HMRC, 2012). Manufacturers clear goods in order to sell them, but not all alcohol that is cleared will necessarily be sold and consumed. Alcohol consumption as measured by HMRC data is consistently higher than that measured via social surveys, and this is likely to be due to the problems described above with self-report measures.

International comparison and evidence

The UK has one of the highest drink drive limits in Europe: Malta is the only other country within Europe to have a limit of 80mg/100ml, whilst all other European countries have limits between zero and 50mg/100ml. However, the penalties for drink driving in the UK are more serious than in many other European countries. Some of the other European countries have a graded sanction system, meaning that similarly harsh penalties are only given for drink drive limits equivalent to, or higher than, ours.

It is difficult to compare drink driving across countries given the cultural and contextual differences, and the lack of common definitions and outcome measures to monitor drink driving, between countries. The European Safety Transport Council (ETSC) notes that the levels of deaths attributed to drink driving cannot be compared between countries, as there are large differences in the way in which countries define and record a 'road death attributed to drink driving' (see ETSC (2012) and Killoran et al (2010) for detailed international comparisons).

A large European research project titled 'Driving Under the Influence of Drugs and Alcohol' (DRUID) was conduced between 2005 and 2012 to provide a robust evidence base to support policy on drink and drug driving. A total of 37 institutes, from 19 countries throughout Europe, took part in the project. The project was comprised of 7 separate work packages, covering topics such as epidemiology, enforcement and rehabilitation. The separate DRUID reports are summarised in the DRUID Main Report (2012). Key findings relating to drink driving are given below:

- Roadside surveys found that the prevalence of alcohol in traffic was higher (3.48 per cent) than for illicit drugs (1.90 per cent) or medicinal drugs (1.36 per cent). The prevalence of alcohol was significantly higher in male than female drivers.
- Consumption of alcohol (> 50mg/100ml) alone or in combination with other drugs caused the highest accident risk compared to other psychoactive substances.
- Alcohol was the most prevalent substance detected in those injured or killed in an accident.

(DRUID Final Report, 2012)

RESEARCH FINDINGS

A summary of key findings from the research reviewed is given below. Further details of the studies reviewed, including methodology and findings, and links to the reports, are given in the References section.

Drink driving and the risk of a road traffic accident

It is well documented that the risk of road traffic injury and collision increases as blood alcohol levels increase. This was demonstrated in the early 1960s in a seminal paper by R. F. Borkenstein using data collected from the city of Grand Rapids in Michigan, U.S.A. (a summary and discussion of the Grand Rapids study is given in Allsop, 1966). More recent studies, including Maycock (1997) and a range of international data, confirm these findings and consistently demonstrate that the risk of injury and collision increases rapidly with alcohol consumption.

- A review by Killoran et al (2010) concluded that drivers with a blood alcohol concentration (BAC) between 20mg/100ml and 50mg/100ml have at least a 3 times greater risk of dying in a crash. This risk increases to at least six times with a BAC between 50mg/100ml and 80mg/100ml, and to 11 times with a BAC between 80mg/100ml and 100mg/100ml.

  (Killoran et al, 2010)

- Using UK data, analysis showed that the relative risk of an accident increases rapidly with the level of alcohol in the blood. The average risk of being involved in an accident at alcohol levels of half the legal limit, the legal limit, and twice the legal limit are respectively 2.4, 5.6 and 31 times the risk encountered by a driver who has not been drinking.

  (Maycock, 1997)

Understanding the drink driver

Surveys and qualitative research are able to provide important insights in to drink driving.

In-depth interviews conducted with a sample of participants who drove after drinking alcohol (either below or above the limit) revealed:

- Driving after drinking alcohol can occur across a wide range of situations, and tends to be more prevalent than initially reported i.e. further probing via in-depth interviewing generally led to participants revealing further accounts of drink driving.
- Knowledge about alcohol and driving e.g. the drink drive limit, alcohol and risk, alcohol content of drinks, was low.
- Driving after drinking, either over or under the limit, was not confined to respondent groups defined in terms of age, gender or social class.

- The qualitative research classified respondents in to 4 types:
  - Outlaws (heavy drinkers for whom the legal limits and guidelines are not important).
  - Good Citizens (marked by the cautiousness of their approach).
  - Ostriches (marked by their low awareness of drinking limits and guidelines, and their tendency to self-deception).
  - Dr Jekyll and Mr Hyde (identified by emotional impulsiveness, which makes them behave in very risky ways on occasion).

  (Sykes et al, 2010)

- Qualitative research revealed that drivers often continued to drive despite being disqualified. The main reasons for this were employment and other social pressures e.g. parental responsibilities, education. Many adopted strategies to minimise their risk of detection. Whilst unlicensed driving tended to be cautious at first, lack of detection reinforced their behaviour and they continued to drive in this way (and often to a greater extent).

  (Lenton et al, 2010)

Review of drink driving law

An independent review of drink and drug driving law was conducted by Sir Peter North in 2010, and the 'Report of the Review of Drink and Drug Driving Law' was published in May 2010 (subsequently referred to as the North Report). The review made 28 recommendations to the Department for Transport with regards to drink driving law, including:

- Reducing the blood alcohol limit to 50mg alcohol per 100ml blood.
- Removal of the statutory option contained in Section 8(2) of the Road Traffic Act 1988 (the statutory option allows a defendant the opportunity to give a blood or urine sample instead of a breath sample where the evidential breath result is less than 40 per cent over the limit).
- Re-launch of the Drink Drive Rehabilitation scheme under which drink drivers can obtain reduced driving disqualifications (see How Effective section).
- Approval of portable evidential breath testing equipment for the police.
- Ensuring that coroners routinely test for, and provide data on, the presence of alcohol in fatalities.
- Providing general and unrestricted power for police to require anyone who is driving a motor vehicle to take a screening breath test (random testing).

The Department for Transport responded to the North Report in 2011, setting out their priorities and actions in relation to drink and drug driving (see Department for Transport, 2011).

How effective?

The counter-measures against drink driving consist of a range of legislative measures and their associated enforcement and penalties, education, and media campaigns.

Many of the evaluations described below have been carried out in other countries, e.g. the U.S.A and Australia. Given the cultural and contextual differences between the UK and other countries, and lack of comparability of drink driving between countries, it is unclear how these findings would translate to the UK.

Drink drive legislation

Successful and effective drink drive legislation relies on publicity (people's awareness of the law and consequences of not complying with it) and visible, rapid enforcement (to act as a deterrent). The drink drive limit in the UK was introduced based on the studies discussed previously that describe the relationship between alcohol consumption and risk of collision and injury (see Research Findings section).

A review of evidence conducted by NICE (Killoran et al, 2010) examined the effectiveness of potential measures, including laws to limit blood alcohol concentration (BAC) levels, on drink driving and its associated injuries. The review included international studies that had examined the effect of lowering the drink drive limit for drivers, e.g. from 100mg/100ml to 80mg/100ml, or from 80mg/100ml to 50mg/100ml.

The review concluded that:

- Overall, there is sufficiently strong evidence to indicate that lowering the legal BAC limit for drivers does help reduce road traffic injuries and deaths in certain contexts.

(Killoran et al, 2010)

The NICE review highlights a particular high quality study by Albalate (2006), which examined the effect of reducing the drink drive limit using data from 15 European countries (by comparing countries who had reduced their limit with a group of countries who had not):

- The study analysed the total fatality rates for the period 1991-2003 across 15 European countries.
- Reducing the BAC limit from 80mg/100ml to 50mg/100ml decreased alcohol-related driving death rates by 11.5 per cent in young people aged 18-25, and by 5.7 per cent in men of all ages (the effect was not statistically significant for the whole population).
- There was a time lag before the benefits of the reduction in limit were seen. The effects were evident after 2 years and increased over time, with the greatest impact between 3 and 7 years.

(Albalate, 2006)

There has been much debate regarding whether the UK should introduce a lower drink drive limit. The European Commission adopted a Recommendation in January 2001 that Member States should set prescribed limits at or below 50mg/100ml. Attempts have been made to estimate the number of deaths and injuries that would be avoided in the UK if the drink drive limit were lowered from 80mg/100ml to 50mg/100ml.

- Assuming reducing the limit would produce the same relative effect on accidents and casualties as observed in other European countries, between 77-168 deaths and 3611-15832 injuries are estimated to be avoidable (if the limit were lowered to 50mg/100ml).

  (Killoran et al, 2010)

- Using UK data from Maycock (1997) and Reported Road Casualties Great Britain, and making certain assumptions about how drivers would behave if the limit were lowered (e.g. that the behaviour of those driving well over the existing 80mg per 100ml alcohol limit is unlikely to be affected by lowering the limit), it has been estimated that:

  - Approximately 43 deaths and 280 serious injuries would be saved by lowering the limit (based on 2008 drink drive road casualty data and estimated relationships between accident risk and driver's BAC).
  - Approximately 65 deaths and 230 casualties would be saved by lowering the limit (based on 2003 drink drive road casualty data and estimated relationships between accident risk and driver's BAC).

    (Allsop, 2005; Allsop, 2010, cited in North Report, 2010)

The range of the estimates is large, and the estimates presented above are based on different modelling procedures. The Killoran et al (2010) estimates are based on an extrapolation of the effect of lowering the BAC limit in other countries, assuming a shift in drinking behaviour across the whole driving population (not just drivers above the limit), and does not relate specifically to drink drive deaths and injuries (as defined as those deaths and injuries where an involved driver/rider was over the drink drive limit, i.e. the estimates include deaths and injuries where the involved driver/rider is under the drink drive limit).

Drink-Drive Rehabilitation Scheme

Since 1 January 2000, the courts have been able to offer drivers who have been disqualified for a period of at least 12 months for a relevant drink drive offence, a referral to an approved Drink Drive Rehabilitation (DDR) course. The courses were developed as an educational intervention aimed at reducing the likelihood of further drink drive re-offending.

If an offender opts to take up the referral opportunity and satisfactorily completes a course, their period of disqualification can be reduced. In the case of a 12-month period of disqualification, the reduction will be 3 months. For longer periods of disqualification, the period of reduction will be up to one quarter, as determined by the court. Responsibility for managing the DDR scheme lies with the Driving Standards Agency (DSA). The DSA set out the syllabus for DDR courses and approve courses offered by course providers. The DDR course is built on a behaviour change model and has specified learning outcomes and assessment criteria (see DSA (2011) for the syllabus).

- In 2008, approximately 60-65 per cent of drink drive offenders were referred to DDR courses in Great Britain.

(North Report, 2010)

An evaluation of the DDR courses in Great Britain has been conducted, based on offenders who were convicted of a drink drive offence and referred to a DDR course provider between 2000 and 2002. By comparing those offenders who attended the course with those who were referred but did not participate in the course, analysis of DVLA offending data indicated that:

- Up to 2 years after the initial drink drive conviction, offenders who did *not* attend a DDR course were 2.6 times more likely to be convicted for a subsequent drink drive offence compared with offenders who had attended a course.
- Overall, the study found that attending a DDR course reduced the likelihood of re-offending for all offenders, regardless of social status, age or gender.
- An extended period of evaluation (over 5 years) indicated that, in the longer term, those who do not attend the course are about 1.75 times more likely than attendees to be re-convicted for a drink-drive offence.

(Smith et al, 2004: Inwood et al, 2007)

Campaigns

It is difficult to isolate the effect of campaigns from the numerous other factors, e.g. enforcement, penalties, that can affect drink drive behaviour. Campaign evaluations use a variety of outcome measures, and these can range from subjective measures of campaign awareness and attitudes towards drink driving, to objective measures of behaviour.

In the UK, national drink drive campaigns are conducted through the Department for Transport's THINK! campaign. The most recent evaluation of the THINK! Drink Drive campaign was conducted in 2009, and examined campaign awareness and attitudes towards drink driving.

- Eighty-one per cent of respondents recalled seeing or hearing something in any of the campaign sources for the Christmas Drink Drive campaign.
- The 'Moment of Doubt' drink drive TV ad was recognised by 78 per cent of respondents. Thirty-six per cent of respondents agreed the 'Moment of Doubt' TV ad 'sticks in my mind', and 28 per cent agreed 'It made me think about the dangers of driving even after a small amount of alcohol'.
- Young male drivers aged 17-29 were more likely to agree that the ad 'had made me drive more carefully' (10 per cent versus 5 per cent of all drivers).
- The acceptability of driving after 2 pints changed little between all campaign stages among all adults (monitored since July 2007 following the initial burst of the campaign).
- The proportion who thought it was very likely that they would get a criminal record if they were caught drink driving increased pre to post campaign (from 55 per cent in July 2007, to 62 in January 2009).

(THINK! Road Safety Campaign Evaluation, 2009)

Systematic reviews and meta-analyses of published evaluation studies (that have attempted to control for publication bias) looking at the effect of campaigns on behavioural outcomes, such as drink drive collisions, suggest that drink drive campaigns do reduce collision and injury numbers when combined with enforcement.

- In a systematic review of 8 studies (all non-UK, published between 1975 and 1998), and using crashes and measured BAC levels as outcome measures, a median decrease in all crashes of 13 per cent was evident following the implementation of mass media campaigns. The median decrease in injury crashes was 10 per cent.
- However, there was concern that not all relevant factors that could affect the outcome measures were controlled for. Most of the campaigns took place in areas with relatively high levels of enforcement and other activities to prevent alcohol-impaired driving.
- None of the studies provided unequivocal evidence for the effectiveness of mass media campaigns.

(Elder et al, 2004)

- A meta-analysis examined the effect of drink driving campaigns on behaviour (all non-UK studies). Studies included utilised different types of media, e.g. internet, TV, radio, cinema, and some campaigns were combined with enforcement measures.
- The results of the meta-analysis show that significant reductions in the number of injury accidents were found for drink driving campaigns (a decrease of 14 per cent). The effect of the campaigns was only evident when combined with enforcement.

(Elvik, 2009)

- A more recent meta-analysis estimated that road safety campaigns (defined as using organised communications involving specific media channels within a given time period) coincide with a 10 per cent reduction in accidents (or a 9 per cent reduction when controlling for publication bias and the variation in study outcomes between studies). Most of the campaigns included in the analysis were accompanied by enforcement measures (all were non-UK studies).
- Meta-regression of these evaluation studies showed that campaigns may be more effective in the short term if the message is delivered with personal communication in a way that is proximal in space and time to the behaviour targeted by the campaign.

(Phillips et al, 2011)

Designated driver programs

There has been limited evaluation of designated driver programs. The review described below considered studies from the U.S.A and Australia.

- A campaign to promote the concept and use of designated drivers reported a 13 per cent increase in survey respondents 'always' selecting a designated driver, but no significant change in self-reported alcohol-impaired driving.
- Incentive programs based in drinking establishments to encourage people to act as designated drivers showed an increase of 0.9 in the number of patrons who identified themselves as designated drivers after the program was implemented.
- All outcome measures had limited value in assessing the potential injury prevention benefits of the programmes.
- There is insufficient evidence to determine the effectiveness of either campaign or incentive designated driver programmes for reducing alcohol-impaired driving and crashes.

(Ditter et al, 2005)

Alcohol ignition interlocks

An alcohol ignition interlock (alcolock) requires a driver to perform a breath test in order to start the vehicle. If the device detects alcohol in excess of the threshold value (can be set at required value), the vehicle will not start.

There is provision within the Road Safety Act 2006 to offer drink drive offenders the opportunity to participate in an alcolock programme. This would be done at the offender's expense, and a reduction in the period of disqualification would be offered in return. This provision has yet to be brought in to force however. The North report (2010) notes that interlocks are not part of the 'sentencing toolkit' of courts in Great Britain, but that some parts of the passenger transport industry use them.

Studies have demonstrated the potential effectiveness of alcolocks in preventing drink driving whilst they are fitted to the vehicle, but there do not appear to be any long term effects on re-offending once the device has been removed (Clayton and Beirness (2008), Willis et al (2009)). Where programmes are voluntary, there have been issues regarding low participation and compliance.

- The installation of ignition interlocks (in non-UK programs) was associated with large reductions in re-arrest rates for alcohol-impaired driving. Following removal of the interlocks, re-arrest rates reverted to levels similar to those for comparison groups. Limited evidence from studies that used crash rates as an outcome measures suggests that alcohol-related crashes decrease while interlocks are installed in vehicles.

  (Elder et al, 2011)

- Interlock programmes have been shown to be effective in reducing drink-driving recidivism for both first-time and repeat offenders while the device is installed. However, there is little, if any, residual effect in preventing impaired driving after the device is removed.

  (Clayton and Beirness, 2008)

- In a sample of largely first time drink drive offenders who had been subsequently re-licenced following disqualification, a 12-month interlock programme conducted in Great Britain reported 328 recorded BACs over 80mg/100ml corresponding to 172 potential trips.
- The drop out rate for the interlock programme was high, with 43 per cent of participants in the interlock group failing to complete the 12 month programme.

  (Beirness et al, 2008)

- A review published in 2004 concluded that:
    - More studies of good quality are needed to confirm the effectiveness of alcolocks in reducing recidivism.
    - The participation rates for interlock programmes were too low for devices to have had much impact on the drink driving population as a whole.

(Willis et al, 2004)

Low BAC laws for young drivers

Evaluations of the effectiveness of low drink drive limits for young drivers have been carried out in the U.S.A and Australia:

- A review of 6 studies concluded that there was sufficient evidence that lower BAC laws were effective in reducing crashes among young or inexperienced drivers. The studies reported reductions in crashes of between 4 and 24 per cent, depending on the study outcome employed (e.g. fatal crashes, non-fatal injury crashes).

(Shults et al, 2001)

REFERENCES

(References are listed by order given in synthesis)

Title:	**Reported Road Casualties Great Britain: 2011 Annual Report**
Published:	Department for Transport, September 2012
Link:	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/9280/rrcgb2011-complete.pdf
Objectives:	Presents detailed statistics regarding the circumstances of personal injury road accidents, including the types of vehicles involved, the resulting casualties, and factors which may contribute to the accidents.
Methodology:	Majority of the statistics in the report are based on information about accidents reported to the police. Coroners and Procurators Fiscal provide data on alcohol levels of road user fatalities.
Key Findings:	• In 2011, a total of 1,901 people were killed and 23,122 seriously injured on Britain's roads. • Provisional data for 2011 estimate there were 6,730 reported drink drive accidents, of which 260 were fatal accidents. • In 2011, the number of people estimated to have been killed in drink drive accidents was 280 (15 per cent of all road accident fatalities), whilst the total number of reported casualties is estimated to be 9,990 (5 per cent of all road casualties) (provisional data). • Provisional data for 2011 show that approximately a fifth of drivers and riders killed in reported accidents are over the limit. This has decreased from around a third in the 1980s. • Nineteen per cent of motorcycle riders killed had over 9mg of alcohol per 100ml of blood, whilst 8 per cent had over 80mg/100ml. Four per cent of riders killed had over 200mg/100ml. • Compared to 2010, provisional data for 2011 shows: – A 2 per cent increase in all drink drive accidents (from 6,630 to 6,730), and an 18 per cent increase in fatal accidents (from 220 to 260). – A 12 per cent increase in the number of fatal casualties (from 250 to 280), and a 5 per cent increase in the number of KSI casualties (from 1,500 to 1,570). The 2010 KSI figure of 1,500 was the lowest recorded since the statistic series began, less than a sixth of the 1979 figure.

	• The number of killed and seriously injured (KSI) drink drive casualties was declining gradually between 2002 and 2010. The recent increase in casualties observed in 2011 is likely to be related to the adverse weather conditions (heavy snow falls) in the first and last quarters of 2010 but not in 2011. • In 2010, young car drivers (aged 17-24) had more drink drive accidents per 100 thousand licence holders and per billion miles driven than any other age group. However, young drivers (17-24 years old) killed or seriously injured over the alcohol limit have fallen by almost half between 2006 (301) and 2010 (156). • Males were twice as likely to report driving whilst thinking they were over the legal alcohol limit than females (10 per cent versus 4 per cent in 2010/11). Those aged 16-19 years were slightly more likely to report driving whilst thinking they were over the limit than older age groups (10 per cent versus 7 per cent in those aged 30-59 years).
Keywords:	Accidents, casualties, drink drive, alcohol, killed or seriously injured.
Comments:	National statistics.

Title:	**Reported Road Casualties Great Britain: 2013 Annual Report**
Published:	Department for Transport, September 2014
Link:	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/359311/rrcgb-2013.pdf
Objectives:	Presents detailed statistics regarding the circumstances of personal injury road accidents, including the types of vehicles involved, the resulting casualties, and factors which may contribute to the accidents.
Methodology:	Most statistics in the report are based on information about accidents reported to the police. Coroners and Procurators Fiscal provide data on alcohol levels of road user fatalities.
Key Findings:	• In 2013, a total of 1,713 people were killed and 21,657 seriously injured on Britain's roads. • In 2012, there were 6,630 reported drink drive accidents, of which 210 were fatal accidents. • In 2012, the number of people estimated to have been killed in drink drive accidents was 230 (13 per cent of all road accident fatalities), whilst the total number of reported casualties is estimated to be 9,930 (5 per cent of all road casualties). • In 2012, approximately a fifth of drivers killed in reported accidents were over the limit. This has decreased from around a third in the 1980s. About 6% of motorcycle riders killed were over the limit. • Sixteen per cent of motorcycle riders killed had over 9mg of alcohol per 100ml of blood, whilst 6 per cent had over 80mg/100ml. One per cent of riders killed had over 200mg/100ml. • Compared to 2011, data for 2012 shows: – A 1 per cent decrease in all drink drive accidents (from 6,690 to 6,630), and a 5 per cent decrease in fatal accidents (from 220 to 210). – A 5 per cent decrease in the number of fatal casualties (from 240 to 230), and a 5 per cent decrease in the number of KSI casualties (from 1,510 to 1,430). The 2012 KSI figure of 1,500 was the lowest recorded since the statistic series began, less than a sixth of the 1979 figure (9,940). • The number of killed and seriously injured (KSI) drink drive casualties declined gradually between 2002 and 2010, rose slightly in 2011 (possibly related to the adverse weather conditions - heavy snow falls in the first and last quarters of 2010 but not in 2011), but declined again in 2012.

	• In 2012, young car drivers (aged 20-24) had more drink drive accidents per 100 thousand licence holders and per billion miles driven than any other age group. However, the number of young drivers (17-24 years old) killed or seriously injured when over the alcohol limit fell from 301 in 2006 to 180 in 2012.
Keywords:	Accidents, casualties, drink drive, alcohol, killed or seriously injured.
Comments:	National statistics.

Title:	**Reported Road Casualties Great Britain: 2014 Annual Report**
Published:	Department for Transport, September 2015
Link:	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/463797/rrcgb-2014.pdf
Objectives:	Presents detailed statistics regarding the circumstances of personal injury road accidents, including the types of vehicles involved, the resulting casualties, and factors which may contribute to the accidents.
Methodology:	Majority of the statistics in the report are based on information about accidents reported to the police. Coroners and Procurators Fiscal provide data on alcohol levels of road user fatalities.
Key Findings:	• In 2014, a total of 1,775 people were killed and 22,807 seriously injured on Britain's roads. • Provisional figures indicate that in 2014, there were 5,650 reported drink drive accidents. • Provisional figures indicate that in 2014 that between 240 and 340 people were killed in drink drive accidents (13% - 19% of all road accident fatalities), whilst the total number of reported casualties is estimated to be 8,320 (4% of all road casualties). • In 2013, almost a fifth of drivers killed in reported accidents were over the limit. This has decreased from around a third in the 1980s. About 9% of motorcycle riders killed were over the limit. • 16% motorcycle riders killed had over 9mg of alcohol per 100ml of blood, and 10% had over 50mg/100 ml, but were under the legal limit of 80mg/100ml. • 27% had over 80mg/100ml, including 3% who had over 200mg/100ml. • Compared to 2012, data for 2013 shows almost no change in drink drive accidents (from 5,690 to 5,650). • In 2013, young car drivers (aged 20-24) had more drink drive accidents per 100 thousand licence holders and per billion miles driven than any other age group. • The number of casualties in reported road accidents involving young drivers (17-24 years old) who were over

	the alcohol limit has fallen from 390 in 2001 to 150 in 2013.
Keywords:	Accidents, casualties, drink drive, alcohol, killed or seriously injured.
Comments:	National statistics.

Title:	**Police Powers and Procedures England and Wales 2010/11**
Published:	Home Office, April 2012.
Link:	http://www.homeoffice.gov.uk/publications/science-research-statistics/research-statistics/police-research/police-powers-procedures-201011/
Objectives:	Statistical release on the following topics: arrests for recorded crime; stops and searches; breath tests; and police action in relation to motoring offences.
Methodology:	Data on breath tests drawn from returns from police forces in England and Wales and relate only to roadside breath tests.
Key Findings:	• During 2010, approximately 733,088 screening breath tests were carried out by police officers (for involvement in an accident, a moving traffic offence, or suspicion of alcohol use). This is ten per cent lower than in 2009. • The number of positive or refused tests also decreased by ten per cent, from 93,232 in 2009 to 83,932 in 2010. • Eleven per cent of all breath tests in 2010 were either refused or gave a positive result (similarly to 2009). • In 2010, the proportion of breath tests that resulted in a positive reading (or were refused) was lowest in June (7 per cent) and December (5 per cent), coinciding with police enforcement campaigns. For the remainder of the year, the proportion resulting in positive or refused readings ranged between 11 and 16 per cent (April / May / August / October highest).
Keywords:	Screening breath tests, police forces, failed, refused.
Comments:	Data relies on accurate returns from police forces.

Title:	**Criminal Justice Statistics in England and Wales 2011**
Published:	Ministry of Justice, February 2013
Link:	http://www.justice.gov.uk/statistics/criminal-justice/criminal-justice-statistics/criminal-justice-statistics-editions
Objectives:	Statistical release presenting key trends on activity in the Criminal Justice System (CJS) for England and Wales.
Methodology:	Data in the publication comes from a variety of administrative systems, including data submitted by police forces, data extracts from court database systems, and data extracts from the Police National Computer.
Key Findings:	• There were approximately 54,900 findings of guilt at courts for 'driving etc. after consuming alcohol or taking drugs' in 2011 in England and Wales. This figure has been decreasing year on year since 2004 when approximately 96,200 findings of guilt were recorded. • In 2011, 84 per cent of the guilty findings were in males; this is a decrease from 88 per cent of the findings being in men in 2005 and 2006. • In 2011, 8 per cent of the guilty findings were in those aged under 21, a decrease from 12 per cent of the findings being in this age group between 2005 and 2008.
Keywords:	Findings of guilt, driving, alcohol, courts.
Comments:	National statistics.

Title:	**A Review of Methodologies Employed in Roadside Surveys of Drinking and Driving**
Published:	P.G. Jackson (2008) Road Safety Research Report 90, Department for Transport
Link:	http://webarchive.nationalarchives.gov.uk/20090417002224/http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme3/methodologies.pdf
Objectives:	To review the roadside surveys of drinking and driving conducted in the UK, and identify examples of best practice from international surveys.
Methodology:	Review of literature, with input and discussion from a Scientific Steering Committee.
Key Findings:	If a roadside survey were to be conducted again, the following key points should be considered: • A clear statement of objectives should be formulated. • The survey should be piloted in one region to trial the methodology. • A rolling survey is recommended over a one-off or repeat survey. • The methodology should include methods and statistical procedures to take account of non-response. • Site and vehicle selection should adopt a scientific approach, such as using a systematic sampling framework to identify survey sites. • The survey team should be composed of police officers and civilian interviewers to provide the best mix of skills and to help strengthen response rates.
Keywords:	Roadside survey, drink driving, methodology, best practice.
Comments:	Comprehensive review of roadside survey methodology.

Title:	**Drinking and Driving in Great Britain: A Review**
Published:	G. Maycock (1997), TRL report TRL232
Link:	https://trl.co.uk/reports/TRL232
Objectives:	To provide an overview of research in to the patterns of drinking and driving, and the characteristics of drinking drivers.
Methodology:	Review of drink drive data sources, including data from Coroners, STATS19, DVLA, police files, and specific research surveys.
Key Findings:	• The most compelling demonstration of the decline of drink-drive accidents over the last decade is that contained in the Department for Transport's Road Accident statistics. • Breath test data provide a convincing demonstration that there has been a marked reduction in the actual amount of drinking and driving over the past decade. • Drivers in the more affluent areas and in occupation groups AB and C1 (managerial, professional and administrative) tend to be under-represented in drink drive accidents and in the High Risk Offender scheme, whilst those in less well-off areas and in occupational groups C2 (skilled manual workers) and DE (semi-skilled and unskilled manual workers and the unemployed) tend to be over-represented • Over the years 1990-94, the annual reduction in positive breath tests for male drivers has averaged 8.3 per cent while the comparable reduction for women is only 2.2 per cent; these differential trends have had the effect of increasing the proportion of drinking drivers who are female from 9.8 per cent in 1990 to 12.4 per cent in 1994. • The roadside survey showed that 13.3 per cent of the male drivers stopped had been drinking to some extent (Breath Alcohol > 3g/100ml) compared to 6.8 per cent of women drivers. Of those driving whilst over the limit, 89 per cent were men. • The relative risk of an accident increases exponentially with the level of alcohol in the blood. The average risk of being involved in an accident at alcohol levels of half the legal limit, the legal limit, and twice the legal limit are respectively 2.4, 5.6 and 31 times the risk encountered by a driver who has not been drinking. • The relative risk of being involved in a fatal accident increases exponentially with the level of alcohol in the body, but at a rate which is more rapid than is the case for injury accidents. • Since the new HRO scheme began in June 1990, 39 per cent of drink-drive offenders in GB have qualified as an HRO. Just over 7 per cent of HROs are women.
Keywords:	Data, drink driving, alcohol, risk, roadside survey.

Comments:	Detailed review and analysis of evidence. Describes the strengths and weaknesses of the various data sources.

Title:	**A Qualitative Study of Drinking and Driving: Report on the Literature Review**
Published:	J. Hopkin, W. Sykes, C. Groom, and J. Kelly (2010) Road Safety Research Report No. 113, Department for Transport
Link:	http://webarchive.nationalarchives.gov.uk/20120606181145/http://www.dft.gov.uk/publications/rsrr-113/
Objectives:	To gain a greater understanding of the attitudes and behaviours of those who drive after drinking alcohol.
Methodology:	Literature review. The review was confined to UK literature (over 30 documents summarised). Distinguishes between 'driving after drinking' (i.e. when consumed alcohol but thought to be under the drink drive limit) and 'drink driving' (i.e. when thought or proven to be over the limit).
Key Findings:	• Surveys show that between one-fifth and two-fifths of drivers report driving within a few hours of drinking alcohol in the past 12 months. • For most of those who drive after drinking alcohol, it is reported to be a rare event: 48% said once or twice during the year. For a minority, driving after drinking is more common: 14 per cent said once a month or more. • Surveys show that 5 per cent of drivers report driving when they thought they were over the legal limit for alcohol in the past 12 months. Most drink drivers report this to be a rare event: 72–73 per cent said once or twice during the year. • More men than women drive after drinking, and more men than women are drink drivers. • The highest reported prevalence of driving after drinking in the past year is in the 30–59 age group. • The highest reported prevalence of drink driving in the past year is in the 17–29 age group and it declines with age. • Driving after drinking is more prevalent among social grade AB and lowest among social grade DE, while drink driving is lowest among social grade DE, but more similar across the other social grades. • The drive after drinking alcohol tends to be on local, short journeys where the road is well known and drivers feel 'safe'. • Over half of driving after drinking occasions are in the evenings, but they also happen in daytime, late at night and on the morning after drinking. • Drive after drinking journeys are mainly made when drivers perceive that they are within the legal limit of alcohol consumption for driving. They are made when drivers feel that they are safe to drive, using their own definitions of

	'safe limits'. • Habitual driving after drinking, and previous experience of driving after drinking without incident and without 'getting caught', also play a part in decisions to drive after drinking. • The likelihood of getting caught whilst drink driving is perceived to be low.
Keywords:	Drinking, driving, surveys, prevalence, alcohol.
Comments:	Comprehensive and detailed review.

Title:	**THINK! Annual Survey 2011**
Published:	Department for Transport, February 2012
Link:	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/8087/think-annual-report-2011.pdf
Objectives:	To measure: • Awareness of, attitudes towards, and perceptions of the THINK! Road safety brand as a whole. • General attitudes towards road safety, and its perceived importance in relation to other social issues. • Attitudes towards driving, and influences on driving behaviour. • Driving and road safety behaviour among different users, including prevalence of dangerous driving behaviour.
Methodology:	Representative survey of adults aged 16 and over in Great Britain. The sample was drawn by means of Random Location sampling. Fieldwork for the 2011 survey was carried out in November 2011. N=2,007 interviews were conducted. Of these, 1,184 were motorists.
Key Findings:	• Seventy-one per cent of respondents selected 'drink driving' in their top 3 most important issues that the Government should address to improve road safety. • Eighty-seven per cent of respondents agreed that driving when over the legal alcohol limit was dangerous. Eighty-two per cent agreed that driving when unsure whether you are over the legal alcohol limit was dangerous. • Around a quarter of respondents (24%) thought they knew someone who drove when over the legal alcohol limit. • Eight per cent of motorists admitted to driving when unsure if they were over the legal alcohol limit. This was down from 14 per cent in 2007 and at lowest since tracking began. • Three per cent of motorists admitted to driving when they thought they were over the legal alcohol limit (down from 6 per cent in 2007 and at lowest since tracking began). • Twenty eight per cent of motorists reported that they do not enjoy their night out as much when they are the designated driver.
Keywords:	Self-report, attitudes, drink driving, alcohol.
Comments:	Robust survey methodology.

Title:	**RAC Report on Motoring 2012**
Published:	RAC May 2012
Link:	http://www.rac.co.uk/pdfs/report-on-motoring/rac-rom-2012.aspx
Objectives:	To assess attitudes and behaviour of motorists.
Methodology:	Online survey of 1,002 motorists (i.e. those who hold a driving licence and drive at least once a month). The sample was nationally representative of age, gender, socioeconomic groups, all GB regions and new car buyers.
Key Findings:	• 7 per cent drove knowing or believing they were over the limit shortly after having a drink over the last year, and 6 per cent reported doing so 'the morning after'. • 14 per cent of 17-24 year olds admitted to knowing or believing they had driven under the influence the morning after drinking.
Keywords:	Self-report, attitudes, drink driving.
Comments:	Annual online survey.

Title:	**Attitudes to Road Safety: Analysis of Driver Behaviour Module, 2010 NatCen Omnibus Survey**
Published:	L. Lee and A. Humphrey (2011) Road Safety Research Report No. 122, Department for Transport
Link:	http://webarchive.nationalarchives.gov.uk/20120606181145/http://www.dft.gov.uk/publications/rsrr-theme5-natcen-2010-survey/
Objectives:	To provide a baseline measure of public attitudes to road safety, with more detailed modules on speeding, drink driving and seatbelt wearing. Some questions focus on general public opinions, others on driver perceptions and behaviour.
Methodology:	A random probability survey of adults aged 16 and over, with questions asked face to face in the respondent's home and via self-completion.
Key Findings:	• Three quarters (74 per cent) of respondents agreed that drivers should not drink any alcohol before driving. • Eighty-four per cent disagreed that people should be free to judge how much they can safely drink. • Seventy-four per cent agreed that most drivers will drive after drinking alcohol if they think that they are under the limit. • Women were more likely to disagree that 'one or two drinks does not make drivers more likely to crash' (62 per cent compared with 50 per cent of male respondents). • Thirty-six per cent of drivers reported having driven after drinking one or two alcoholic drinks in the last 12 months. 7 per cent of drivers had driven at least once or twice in the last 12 months when they thought that they were over the legal limit. • Men were more likely to report driving after one or two drinks at least once or twice in the last 12 months (44 per cent) than women (27 per cent). Men were also more likely to admit to driving when they thought they were over the legal limit (9 per cent compared with 4 per cent of women). • Those most likely to report driving after one or two drinks were those aged 65 years or more (46 per cent).
Themes:	Omnibus, attitudes, alcohol, driving.
Comments:	Robust survey of attitudes.

Title:	**Drink-Driving: Prevalence and Attitudes in England and Wales 2002**
Published:	L. Brasnett (2004) Home Office Findings 258
Link:	http://webarchive.nationalarchives.gov.uk/20110220105210/http://rds.homeoffice.gov.uk/rds/pdfs04/r258.pdf
Objectives:	To explore the prevalence and frequency of driving after drinking alcohol (both under and above the perceived legal blood alcohol concentration limit), and to examine the characteristics e.g. age, sex, of those who drive 'over the limit'.
Methodology:	Nationally representative survey of 1,648 adults (of which 1,083 had driven in the last year, aged 16 and over).
Key Findings:	• Nearly half (44 per cent) of all drivers in the Omnibus Survey had driven after drinking some amount of alcohol in the previous year. One in eight drivers (12 per cent) had driven after drinking what they believed was an 'over the limit' amount of alcohol in the previous year. • Young men were the most likely to believe they had driven whilst 'over the limit'. Over one quarter of 16- to 29-year-olds admitted to driving whilst 'over the limit' in the previous year. • One in eight (13 per cent) of all respondents (drivers and non-drivers) had been a passenger when they thought the driver was 'over the limit' in the previous year. • People who admitted to driving whilst 'over the limit' often explained their behaviour by stating that they 'felt safe to drive' at the time, despite recognising then (or later) that they were 'over the limit'. • The majority of respondents (74 per cent) said they wanted harsher penalties for drivers caught over the limit. However, when given specific scenarios, they frequently chose a more lenient option (than those typically used), particularly for first-time offenders and those who were only slightly over the limit. • Half of all respondents thought a person was unlikely to be caught by the police even if they drove whilst over the limit once a week for a year.
Keywords:	ONS omnibus survey, drink driving, self-report.
Comments:	Robust survey methodology.

Title:	**Review of Effectiveness of Laws Limiting Blood Alcohol Concentration Levels to Reduce Alcohol-Related Road Injuries and Deaths**
Published:	A. Killoran, U. Canning, N. Doyle, and L. Sheppard (2010) National Institute for Health and Clinical Excellence (NICE)
Link:	http://www.nice.org.uk/media/3FE/1A/BloodAlcoholContentEffectivenessReview.pdf and http://www.nice.org.uk/media/3FE/33/BloodAlcoholContentRoadTrafficModelling.pdf
Objectives:	To assess how effective the blood alcohol concentration (BAC) laws are at reducing road traffic injuries and deaths. Specifically, to assess: • Drink-driving patterns and the associated risk of being injured or killed in a road traffic accident. • How BAC limits and related legislative measures have changed drink-drinking behaviour and helped reduce alcohol-related road traffic injuries and deaths. • Models estimating the potential impact of lowering the BAC limit from 80mg per 100ml to 50mg per 100ml in England and Wales. • Lessons from other countries on using BAC laws as part of overall alcohol control and road safety policies.
Methodology:	Includes a summary review and systematic reviews. Systematic reviews were conducted in accordance with the methods outlined in NICE's *Methods for Development of NICE Public Health Guidance* (2009).
Key Findings:	• There is strong evidence that someone's ability to drive is affected if they have any alcohol in their blood. Younger drivers (under 21) are particularly at risk of crashing whenever they have consumed alcohol – whatever their BAC level. • Overall, there is sufficiently strong evidence to indicate that lowering the legal BAC limit for drivers does help reduce road traffic injuries and deaths in certain contexts. • There is insufficient evidence to judge what level of effect might be sustained by lowering the BAC limit. • There is sufficiently strong evidence to indicate that publicity and visible, rapid enforcement are needed if BAC laws are to be effective. • There is sufficiently strong evidence to indicate that lowering the BAC limit changes the drink driving behaviour of drivers at all BAC levels. • Overall, the evidence indicates that lowering the UK BAC limit from 80mg per 100ml to 50mg per 100ml is likely to reduce the number of alcohol-related deaths and injuries. Assuming reducing the limit would produce the same relative effect on accidents and casualties as observed in other European countries, between 77-168 deaths and

	3611-15832 injuries are estimated to be avoidable.
Keywords:	Blood alcohol concentration, laws, penalties, effectiveness.
Comments:	Systematic review.

Title:	**Drinking Among British women and its Impact on their Pedestrian and Driving Activities: A Review of the Literature**
Published:	K. Beuret, C. Corbett and H. Ward (2012) Social Research Associates
Link:	http://www.reesjeffreys.co.uk/wp-content/uploads/2010/10/Women-and-Drinking-Literature-Review-2012.pdf
Objectives:	Several aims identified, including: • To explore the evidence concerning alcohol consumption by women, and how this impacts on their safety as drivers and pedestrians. • To investigate the links between alcohol consumption and the documented rise in convictions for drink driving for women.
Methodology:	Literature review.
Key Findings:	• For drivers over the age of 30, and when controlling for mileage driven, proportionately more females fail a breath test after a collision than males. • There was a 41 per cent fall in male court convictions for drink/drug driving between 2003 and 2010, but only a 7 per cent corresponding fall for women in the same period.
Keywords:	Alcohol, women, consumption, breath tests, convictions.
Comments:	Summary review of statistics and literature.

Title:	**British Social Attitudes Survey 2011: Public Attitudes Towards Transport**
Published:	Department for Transport, February 2012
Link:	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/9029/bsa-2011-report.pdf
Objectives:	To collect data on public attitudes towards a range of topics, including road safety.
Methodology:	Representative household survey of adults aged 18 and over, utilising a combination of face-to-face interviews and self-completion questionnaires. Fieldwork for the 2011 survey was carried out between June and September 2011.
Key Findings:	• Eighty six per cent of respondents agreed that someone should not drive if they have drunk any alcohol. • Females were also more likely than males to agree that someone who has drunk any alcohol should not drive (89 per cent compared to 82 percent of males). • Seventy-seven percent agreed that most people don't know how much alcohol they can drink before being over the drink drive limit.
Keywords:	Household survey, attitudes, drink driving.
Comments:	Robust survey methodology.

Title:	**High Risk Offenders' Reconviction Patterns**
Published:	J. Broughton (2002), TRL report TRL524
Link:	https://trl.co.uk/reports/TRL524
Objectives:	To examine the offence history of HROs, and their future offending behaviour once classified as HROs.
Methodology:	Analysis of DVLA driver licensing data.
Key Findings:	• For all HROs, 11.5 per cent of male HROs and 6.1 per cent of female HROs were convicted for further drink drive offences within 4 years of the original conviction. This was compared to 1.0 per cent of male non-HRO drink drive offenders and 0.3 per cent of female non-HRO drink drive offenders. • The proportion of re-offending drivers was higher among HROs with previous convictions than those without. • The re-offending rate decreases markedly with age amongst all drink drive offenders. • The data suggests that many convicted drink drivers continue to re-offend irrespective of their disqualification that follows their conviction. • Additional analysis of coroners' data showed that the proportion of women two and a half times over the legal alcohol limit was greater than the proportion of men (50 per cent versus 40 per cent).
Keywords:	HROs, offending, conviction.
Comments:	Detailed analysis.

Title:	**Criminal and Motoring Offences of Drink Drivers who are High Risk Offenders**
Published:	G.P. Davies and J. Broughton (2002) TRL report TRL551
Link:	https://trl.co.uk/reports/TRL551
Objectives:	To examine the criminal and motoring offence history of HROs, and their future offending behaviour once classified as HROs.
Methodology:	Data matching between Driver and Vehicle Licensing Agency (DVLA) Driver Licence File data and Home Office Offenders Index data. For examining past offending behaviour, data was extracted for offenders who became HROs in 1999. For examining future offending behaviour, data was extracted for offenders who became HROs in 1996.
Key Findings:	• Offenders who are convicted of drink/driving, who have a BAC exceeding 2.5 times the legal limit, and who have no earlier convictions for drink driving have a similar motoring and criminal history to that of first time drink drive offenders with a lower BAC. • The record of offending after becoming an HRO for these one-off high BAC offenders is also similar to that of the 'ordinary' drink drive offender. • In contrast, the offender who has at least two offences within three years is more likely to reoffend. In particular, repeat offenders who refuse to supply a specimen after their second offence are likely to have committed a greater number of criminal and motoring offences before becoming an HRO. • They are also more likely to commit further criminal offences after being sentenced for the second drink drive offence. • For all groups (HROs and 'ordinary' drink drivers) the number of offences is lower in the 3-year period following the reference offence than the 3-year period before. • For each social group, the younger drivers have a worse record than the older ones. For the younger age group, the offence record is worst for the lowest social group and 'best' for the highest. • No clear evidence that the HRO scheme decreases re-offending
Keywords:	HRO, offending, age, social group.
Comments:	There were uncertainties in the data matching process. Results should be taken as indicative.

Title:	**Re-offending of Adults: Results from the 2008 Cohort**
Published:	Ministry of Justice, March 2010
Link:	http://www.justice.gov.uk/downloads/statistics/mojstats/re-offending-stats/reoffending-adults-2008-cohort.pdf
Objectives:	To determine actual and predicted proven re-offending rates of adult offenders who were released from custody or started a court order under probation supervision in the first quarter of 2008.
Methodology:	The offenders in the cohort are those released from custody or started a court order during the first quarter of 2000 (for the baseline year) and 2008 (for the current results). Analysis of data obtained from the Police National Computer (PNC), using a one-year follow up period.
Key Findings:	• Actual one-year re-offending rate for those originally convicted of drink driving offences was 16.8 per cent in 2008 (in a sample of 3,800 offenders). NB. Re-offending offence not necessarily in the same category as the original offence. • For those offenders originally convicted of drink driving offences, 15 per cent of re-offences during the one-year follow up period related to drink driving.
Keywords:	Re-offending, drink drive offences.
Comments:	Official records likely to under-record actual offending behaviour, and are partly determined by decisions on the part of criminal justice practitioners.

Title:	**Re-offending of Adults: Results from the 2004 Cohort**
Published:	Home Office Statistical Bulletin (March 2007)
Link:	http://webarchive.nationalarchives.gov.uk/20110218135832/rds.homeoffice.gov.uk/rds/pdfs07/hosb0607.pdf
Objectives:	To determine actual and predicted proven re-offending rates of adult offenders who were released from prison or started a community penalty in the first quarter of 2004.
Methodology:	The offenders in the cohort are those starting community sentences or discharged from prison during the first quarter of 2000 (for the baseline year) and 2004 (for the current results). Analysis of administrative datasets.
Key Findings:	• In 2004, the actual proven re-offending rate for all offenders was 55.5 per cent. • Overall, 30 per cent of those who re-offended committed their first re-offence in the same offence type as their original offence. • Actual 2-year re-offending rate for those originally convicted of drink driving offences was 31.8 per cent.
Keywords:	Re-offending, drink drive offences.
Comments:	Official records likely to under-record actual offending behaviour, and are partly determined by decisions on the part of criminal justice practitioners.

Title:	**General Lifestyle Survey**
Published:	Office for National Statistics, March 2012
Link:	http://www.ons.gov.uk/ons/rel/ghs/general-lifestyle-survey/2010/index.html
Objectives:	Multi-purpose continuous household survey to collect information on a range of topics, e.g. smoking, drinking, households, marriage and cohabitation.
Methodology:	Representative household survey. N=15,000 interviews conducted with adults aged 16 or older. Alcohol is one of the main topics covered by the survey. Latest report for the calendar year 2010. Respondents were asked 2 sets of questions about their drinking behaviour to derive measures of alcohol consumption.
Key Findings:	• Between 2005 and 2010 average weekly alcohol consumption decreased from 14.3 units to 11.5 units per adult. Among men average alcohol consumption decreased from 19.9 units to 15.9 units a week and for women from 9.4 units to 7.6 units a week. • The proportion of men drinking more than 21 units a week fell from 31 per cent in 2005 to 26 per cent in 2010. The proportion of women drinking more than 14 units a week fell from 21 per cent to 17 per cent over the same period. These decreases were mainly driven by falls in those aged between 16-44 years old. • In 2010, 54 per cent of adults drank alcohol at least once a week and 26 per cent did so more than twice a week. • Men tended to drink more often than women: 16 per cent of men consumed alcohol on 5 or more days a week compared with 10 per cent of women. • Twelve per cent of men had an alcoholic drink almost every day compared with 6 per cent of women. • Overall, 87 per cent of adults averaged at least 3 alcohol free days a week. • Adults tend to drink more often as they get older. For example, over a fifth (22 per cent) of men aged 65 and over, consumed alcohol almost every day compared with just 3 per cent of men in the 16 to 24 age group.
Keywords:	Household survey, alcohol consumption.
Comments:	Robust methodology but may be difficulties with accurately recording alcohol consumption via self-report.

Title:	**Health Survey for England**
Published:	NHS Information Centre, December 2012
Link:	http://www.ic.nhs.uk/searchcatalogue?productid=10149&topics=1%2fPublic+health%2fLifestyle&sort=Relevance&size=10&page=1#top
Objectives:	Household survey to collect information on a range of aspects concerning the public's health, and many of the factors that affect health.
Methodology:	Representative household survey. Total of 8,610 adults were interviewed. Questions on alcohol asked via interview and a drinking diary.
Key Findings:	• Based on interview data, 87 per cent of men and 81 per cent of women had drunk alcohol at least occasionally in the last year. • The frequency of drinking increased with age and this increase was greater for men than women. Twenty-nine per cent of men aged 75 and over had drunk on five or more days in the last week. • Among men, 39 per cent drank above the recommended levels on at least one day in the last week, including 22 per cent who drank more than twice the recommended amount at least once. The corresponding proportions among women were 27 per cent and 13 per cent. • The diary recorded a higher proportion than the interview of those drinking at more than recommended levels during the week of measurement. • Average (mean) weekly consumption among those who did drink was 17.2 units for men and 9.4 units for women. For both men and women it was lowest among those aged 75 and over (13.6 units in a week for men, 5.3 units for women). Men aged between 55 and 64 and women aged between 45 and 54 drank more than those in other age groups (19.4 units and11.6 units respectively).
Keywords:	Household survey, alcohol consumption, drinking patterns.
Comments:	Robust methodology but may be difficulties with accurately recording alcohol consumption via self-report.

Title:	**HMRC Alcohol Factsheet**
Published:	HMRC March 2012
Link:	https://www.uktradeinfo.com/Statistics/Pages/TaxAndDutyBulletins.aspx
Objectives:	Factsheet to provide information on alcoholic drinks. Contains historic series of the amounts of goods cleared, the amount of duty collected and taxation on alcohol in the UK.
Methodology:	The datasets are compiled using information taken from traders' returns and from Departmental Accounting Systems.
Key Findings:	• Total alcohol clearances per adult was highest in 2004/05 at 11.80 litres of pure alcohol. • Total alcohol clearances per adult was 10.59 litres in 2010/11.
Keywords:	Alcohol clearance. adults.
Comments:	Administrative data.

Title:	**Drink Driving: Towards Zero Tolerance**
Published:	F. Podda (2012) European Transport Safety Council
Link:	http://www.etsc.eu/documents/Drink_Driving_Towards_Zero_Tolerance.pdf
Objectives:	Policy paper to provide an overview of the drink driving situation in the European Union and measures taken at the EU level to curb drink driving deaths.
Methodology:	Not applicable.
Key Findings:	• Only 2 countries (UK and Malta) have a BAC limit higher than the EC recommendation of 50mg alcohol per 100ml blood. • Around 3,200 people were recorded killed in a drink driving collision in 2010 in 22 EU countries, compared with 6,400 in 2001. Road deaths attributed to alcohol have been cut by 53 per cent between 2001 and 2010 in these countries, while other road deaths decreased by 47 per cent. • Levels of deaths attributed to drink driving cannot be compared between countries, as there are large differences in the way in which countries define and record a 'road death attributed to drink driving'. • Countries are therefore compared on the basis of developments in deaths attributed to drink driving, relative to developments in other road deaths, using each country's own method of identifying alcohol-related deaths
Keywords:	Drink driving, limit, road deaths.
Comments:	Policy paper.

Title:	**DRUID Final Report: Work Performed, Main Results and Recommendations**
Published:	H. Schulze, M. Schumacher, R. Urmeew, and K. Auerbach (2012)
Link:	http://www.druid-project.eu/Druid/EN/Dissemination/downloads_and_links/2012_Washington_Brochure.pdf?__blob=publicationFile
Objectives:	To provide scientific support to EU road safety policy by making evidence based recommendations concerning combating driving under the influence of psychoactive substances (DRUID; DRiving Under the Influence of Drugs and medicines). The final report summarises the objectives and presents the main results from the 7 work packages.
Methodology:	Thirty-seven organisations from across 19 European countries took part in the project. The work packages involved evidence reviews, epidemiological studies, experimental studies, qualitative research and quantitative research. Topics covered included epidemiology, enforcement and classification of medicines.
Key Findings:	• Roadside surveys found that the prevalence of alcohol in traffic was higher (3.48 per cent) than for illicit drugs (1.90 per cent) or medicinal drugs (1.36 per cent). The prevalence of alcohol was significantly higher in male than female drivers. • Alcohol was the most prevalent substance detected in those injured or killed in an accident (prevalence of alcohol alone was between 15-30 per cent across the different countries, except Portugal (40 per cent)). • Consumption of alcohol (>50mg/100ml) alone or in combination with other drugs caused the highest accident risk compared to other psychoactive substances. • The risk of being killed or seriously injured was estimated as: – Medium increased risk for drivers with BACs between 50-80mg alcohol per 100ml blood. – Highly increased risk for drivers with BACs between 80-120mg alcohol per 100ml blood. – Extremely increased risk for drivers with BACs over 120mg alcohol per 100ml blood. • Qualitative research with those addicted to alcohol showed that respondents did not believe that alcohol would impair their driving. • Drink Drive Rehabilitation courses show a 46 per cent average reduction in recidivism rate (range from 15-71 per cent, based on 61 studies). However, the robustness of this finding is uncertain.
Keywords:	Alcohol, drugs, medicines, driving, risk, prevalence.
Comments:	Large in-depth study. Data collection problematic in some countries.

Title:	**Alcohol and Road Accidents: A Discussion of the Grand Rapids Study**
Published:	R.E. Allsop (1966) TRL report RRL Report No. 6
Link:	https://trl.co.uk/reports/LR6
Objectives:	To summarise and discuss the Grand Rapids study 'The role of the drinking driver in traffic accidents' by R. F. Borkenstein and colleagues, published in 1964.
Methodology:	Review and further analysis of the original study, which was based on a group of accident involved drivers and a control group of non-accident involved drivers (selected from the city's traffic). Drivers gave a breath test and completed an interview.
Key Findings:	Conclusions from original Grand Rapids study: • Higher alcohol levels are associated with more frequent accident experience (and the risk increases more and more rapidly as the highest alcohol levels are reached). • Many people do not know or do not admit the effect of alcohol on their driving behaviour. Conclusions from re-analysis: • Several possible sources of small errors in control sample selection may have lead to slight underestimation of the increase in accident risk as the alcohol level rises. • The increases in accident risk resulting from high alcohol levels is about half as great again for the young and elderly drivers as for the middle-aged drivers.
Keywords:	Drink driving, alcohol, Grand Rapids, risk.
Comments:	Technical report.

Title:	**A Qualitative Study of Drinking and Driving: Report of Findings**
Published:	W. Sykes, C. Groom, J. Kelly and J. Hopkin (2010) Road Safety Research Report No. 114, Department for Transport
Link:	http://webarchive.nationalarchives.gov.uk/20120606181145/http://assets.dft.gov.uk/publications/rsrr-114/review.pdf
Objectives:	To gain a greater understanding of the attitudes and behaviours of those who drive after drinking alcohol.
Methodology:	Qualitative research including 50 in-depth interviews with drivers who had driven after consuming alcohol (a third of the sample had convictions for drink driving in the last 3 months). Distinguishes between 'driving after drinking' (i.e. when consumed alcohol but thought to be under the drink drive limit) and 'drink driving' (i.e. when thought or proven to be over the limit).
Key Findings:	• Alcohol was perceived to be an important part of most social occasions, and most respondents drank more than initially reported, sometimes considerably more. • Respondents often had a high regard for their driving skills. • Respondents were often against drinking and driving and thought it was risky and dangerous. They did not readily identify with terms like 'drink driver'. • When they felt they had taken risks, respondents were likely to attribute it to the specific circumstances of the occasion, rather than seeing themselves as drink drivers. • Feeling safe was often more important in decision making than the legal limit and many thought they would be safe beyond the legal limit. • Some respondents thought of the limit as their 'drinking allowance'; the level they could drink up to. • Respondents thought they were least at risk of being stopped by the police if they drove short distances and kept to back roads away from drinking hot spots. • Respondents often drank at home when they thought there was little likelihood of going out again, but they nonetheless reported driving after drinking at home for all sorts of reasons; often short local trips that were unplanned. • Respondents were classified in to 4 types: - Outlaws (heavy drinkers for whom the legal limits and guidelines are not important). - Good Citizens (marked by the cautiousness of their approach). - Ostriches (marked by their low awareness of drinking limits and guidelines, and their tendency to self-deception).

	- Dr Jekyll and Mr Hyde (identified by emotional impulsiveness, which makes them behave in very risky ways on occasion).
Keywords:	Drinking, driving, qualitative, prevalence, alcohol.
Comments:	In-depth qualitative research.

Title:	**Recidivist Drink Drivers' Self-Reported Reasons For Driving Whilst Unlicensed—A Qualitative Analysis**
Published:	S. Lenton, J. Fetherston, and R. Cercarelli (2010) Accident Analysis and Prevention, 42; 637-644
Link:	http://www.ncbi.nlm.nih.gov/pubmed/20159089
Objectives:	To provide further understanding of the motivations of repeat drink drive offenders.
Methodology:	In-depth interviews (using both qualitative and quantitative methods) with n=40 community recruited recidivist drink drivers (36 men and 4 women). Participants had at least 2 drink drive offences.
Key Findings:	• Fifty-five per cent of respondents scored as 'alcohol dependent' on the Alcohol Dependence Scale. • Drivers often continued to drive despite being disqualified. The main reasons for this were employment and other social pressures e.g. parental responsibilities, education. • Many adopted strategies to minimise their risk of detection. Whilst unlicensed driving tended to be cautious at first, lack of detection reinforced their behaviour and they continued to drive in this way (and often to a greater extent).
Keywords:	Alcohol, driving, recidivist, unlicensed.
Comments:	Australian research.

Title:	**Report of the Review of Drink and Drug Driving Law**
Published:	P. North (2010) Department for Transport
Link:	http://webarchive.nationalarchives.gov.uk/20100921035225/http://northreview.independent.gov.uk/report
Objectives:	To examine the legal framework in Great Britain governing drink and drug driving and offer advice to Ministers.
Methodology:	Consideration of the legal framework, evidence review, and discussions with relevant groups and individuals.
Key Findings:	• The report presented 28 recommendations regarding drink driving law, including: - Reducing the blood alcohol limit to 50mg alcohol per 100ml blood. - Removal of the statutory option contained in Section 8(2) of the Road Traffic Act 1988 (the statutory option allows a defendant the opportunity to give a blood or urine sample instead of a breath sample where the evidential breath result is less than 40 per cent over limit). - Re-launch of the Drink Drive Rehabilitation scheme under which drink drivers can obtain reduced driving disqualifications. - Approval of portable evidential breath testing equipment for the police. - Ensuring that coroners routinely test for, and provide data on, the presence of alcohol in fatalities. - Providing general and unrestricted power for police to require anyone who is driving a motor vehicle to take a screening breath test (random testing). • The report presented 23 recommendations regarding drug driving law.
Keywords:	Drink driving, drug driving, legal framework.
Comments:	Independent review. Usefully summarises the legislation.

Title:	**The Government's Response to the Reports by Sir Peter North CBE QC and the Transport Select Committee on Drink and Drug Driving**
Published:	Department for Transport, 2011
Link:	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4429/report.pdf
Objectives:	To provide a response to the reports in the title, based on an assessment of evidence and resources. Priorities and actions are highlighted.
Methodology:	N/A
Key Findings:	In relation to drink driving, stated will implement the following measures: • Revoke the right people have to opt for a blood test when their evidential breath test result is less than 40% over the limit (the 'statutory option'); • Streamline the procedure for testing drink-drivers in hospital; • Close a loophole used by high risk offenders to delay their medical examinations; • Require serious drink-drivers to take remedial training and a linked driving assessment – as well as a medical examination - before recovering their licence; • Re-launch the drink-drive rehabilitation scheme under which drink-drivers can obtain reduced driving disqualifications; • Approve portable evidential breath testing equipment for the police; • Provide for preliminary testing not to be required where evidential testing can be undertaken away from the police station.
Keywords:	Drink driving, drug driving, priorities, legislation.
Comments:	Policy document.

Title:	**Lowering Blood Alcohol Content Levels to Save Lives: The European Experience**
Published:	D. Albalate (2006) Research Institute of Applied Economics
Link:	http://www.ub.edu/irea/working_papers/2006/200603.pdf
Objectives:	To evaluate the effectiveness of lowering the blood alcohol concentration (BAC) limit to 50mg alcohol per 100ml blood in several European countries.
Methodology:	Examined fatality rates for the period 1991-2003 in a selection of European countries who had reduced BAC limit to 50mg alcohol per 100ml blood and a control group of countries that kept a higher BAC limit. Data from the European CARE database (Community database on Accidents on the Roads in Europe) was analysed.
Key Findings:	• Reducing the BAC limit from 80mg/100ml to 50mg/100ml decreased total fatality rates by 5.7 per cent in men of all ages. • The reduction in the limit appeared to not have an effect on female fatalities. • There was a time lag before the benefits of the reduction in limit were seen. The effects were evident after 2 years and increased over time, with the greatest impact between 3 and 7 years.
Keywords:	Alcohol, drink driving, BAC, evaluation.
Comments:	Technical paper.

Title:	**How Much is Too Much? – Lowering the Legal Drink-Drive Limit**
Published:	R. Allsop (2005)
Link:	http://www.pacts.org.uk/docs/pdf-bank/AllsopBACpaper.pdf
Objectives:	Presented at a Brake Conference on Drink and Drug Driving.
Methodology:	Used data from Maycock 1997 (risk function) and a figure of 550 deaths in accidents involving a driver over the legal limit (typical of number of deaths at that time) to estimate how many lives would be saved if the blood alcohol content (BAC) limit was lowered.
Key Findings:	Estimated that if the limit were to be lowered to 50mg/100ml: • That those driving with BACs >110mg/100ml would account for around 500 of the 550 drink drive deaths each year, and would be unlikely to be affected much by a lowering of the limit to 50mg/100ml. • That those driving with BACs between 80mg/100ml and 110mg/100ml would reduce their drinking to exceed a 50mg/100ml limit by the same amount that they exceed 80mg/100ml, and 40 deaths would be saved. • That those driving with BACs between 50mg/100ml and 80mg/100ml would reduce their drinking to comply with the new limit and 23 deaths would be saved. • That those driving with BACs greater than zero but below 50mg/100ml would not need to reduce their drinking. Some may do so however, which would add to the number of deaths saved.
Keywords:	BAC limit, risk function.
Comments:	Makes assumptions about how drivers' behaviour would change if the BAC limit were lowered.

Title:	**Drink Drive Rehabilitation Syllabus**
Published:	Driving Standards Agency (2011)
Link:	https://www.gov.uk/drink-drive-rehabilitation-syllabus
Objectives:	Sets out the syllabus for Drink Drive Rehabilitation (DDR) courses.
Methodology:	NA.
Key Findings:	• Unit learning outcomes set out what a DDR course participant is expected to know, understand, or be able to do as a result of their participation. • The 'assessment criteria' of a unit specify the standard a participant is expected to meet in order to demonstrate that a learning outcome has been achieved.
Keywords:	Drink drive rehabilitation, learning outcomes, assessment criteria.
Comments:	Syllabus document.

Title:	**The Drink/Drive Rehabilitation Scheme: Evaluation and Monitoring**
Published:	L. R. Smith, G. Buckle, M. Keigan, S. Buttress, and J. Stone (2004) TRL report TRL613
Link:	https://trl.co.uk/reports/TRL613
Objectives:	To evaluate the drink rive rehabilitation (DDR) scheme. Specifically to determine: - The proportion of convicted drink rive offenders referred to the scheme by courts (referral rate). - The proportion of referred offenders who go on to complete a DDR course (take up rate). - The effect of course attendance on convictions for subsequent drink drive (or motoring) offences (reconviction rate).
Methodology:	A database of all drink drive offenders who had been convicted between April 2000 and March 2002 and referred to a DDR course was matched to DVLA data.
Key Findings:	• The overall court referral rate, estimated using only matched data, was 59 per cent. • Up to 2 years after the initial drink drive conviction, offenders who did *not* attend a DDR course were 2.6 times more likely to be convicted for a subsequent drink drive offence compared with offenders who had attended a course. • Overall, the study found that attending a DDR course reduced the likelihood of re-offending for all offenders, regardless of social status, age or gender.
Keywords:	Drink driving, drink drive rehabilitation, evaluation.
Comments:	National evaluation in Great Britain.

Title:	**Extended Monitoring of Drink-Drive Rehabilitation Courses - Final Report**
Published:	C. Inwood, G. Buckle, M. Keigan, and R. Borrill (2007) TRL Report TRL662
Link:	https://trl.co.uk/reports/TRL662
Objectives:	The objectives were: - To continue to monitor the take-up and reconviction rates of offenders referred to drink drive rehabilitation (DDR) courses between April 2000 and March 2002. - To examine differences in course providers to see if there was any effect on reconviction rates - To examine the attitudes and behaviours of offenders
Methodology:	Methodology included: - A database of all drink drive offenders who had been convicted between April 2000 and March 2002 and referred to a DDR course was matched to DVLA data (continuation of TRL report TRL613). - Telephone interviews with a representative from each course provider. - Exploratory focus groups with drink drive offenders. - A postal survey of referred drink drive offenders.
Key Findings:	• Forty-four per cent of referred offenders attended a DDR course. • Female offenders, older offenders, and offenders of a higher social status were more likely to attend a DDR course. High risk offenders (HROs) were less likely to attend a course. • Monitoring over a 5-year period showed that non-attendees were about 1.75 times as likely as attendees to be convicted of a subsequent drink drive offence. • Monitoring over a shorter term showed that non-attendees were 2.15 times more likely to re-offend than attendees within 3 years of their initial conviction. • Attendance was more beneficial (in terms of reconviction rates) for younger offenders, male offenders, and those with a previous motoring conviction. • Offenders often claimed they had driven over the legal limit because they felt they were still safe to drive, or because they thought they were still under the limit. • The main reasons for not attending a course included the cost, the intention not to drive again, and thinking the offence was a 'one off'.
Keywords:	Drink drive rehabilitation (DDR) courses, reconviction, take up, course providers, attitudes, behaviour.
Comments:	An extension of Smith et al, 2004 (TRL report TRL613).

Title:	**THINK! Road Safety Campaign Evaluation: Post evaluation of the 'Personal Consequences' Drink Drive campaign**
Published:	Department for Transport, February 2009
Link:	http://webarchive.nationalarchives.gov.uk/20090418041905/http:/www.dft.gov.uk/adobepdf/164386/711130/drink-drive09.pdf
Objectives:	To evaluate the 'Personal Consequences' drink drive campaign (which launched in 2007): • To evaluate awareness and communication of the Christmas 2008 burst of the campaign • To measure attitudes towards drink driving. • To look at perceived consequences of drink driving.
Methodology:	Representative survey of adults aged 15 and over in Great Britain. The sample was drawn by means of Random Location sampling. Fieldwork was carried out in January 2009. N=2,005 interviews were conducted.
Key Findings:	• Eighty-one per cent of respondents recalled seeing or hearing something in any of the campaign sources for the Christmas Drink Drive campaign. • Sixteen per cent of respondents gave an unprompted description that could be directly attributable to the 'Moment of Doubt' TV ad. • The 'Moment of Doubt' TV ad was recognised by 78 per cent of respondents. • Thirty-six per cent of respondents agreed the 'Moment of Doubt' TV ad 'sticks in my mind', and 28 per cent agreed 'It made me think about the dangers of driving even after a small amount of alcohol'. • Young male drivers aged 17-29 were more likely to say the ad was aimed at them (18 per cent versus 8 per cent of all drivers). • Young male drivers aged 17-29 were more likely to agree that the ad 'had made me drive more carefully' (10 per cent versus 5 per cent of all drivers). • Forty per cent of drivers agreed it was safe to drive after a single drink (similar to the 41 per cent who agreed in July 2008). • The acceptability of driving after 2 pints changed little between all campaign stages among all adults (monitored since July 2007). • The proportion who thought it was very likely that they would get a criminal record if they were caught drink driving increased pre to post campaign (from 55 per cent in July 2007, to 62 in January 2009).
Keywords:	Evaluation, self-report, attitudes, drink driving, alcohol.
Comments:	Robust survey methodology.

Title:	**Effectiveness of Mass Media Campaigns for Reducing Drinking and Driving and Alcohol-Involved Crashes: A Systematic Review**
Published:	R.W. Elder, R.A. Shults, D.A. Sleet, J.L. Nichols, R.S. Thompson, and W. Rajab (2004) Am. J. Prev. Med, 27(1), 57-65.
Link:	http://trid.trb.org/view/2004/C/1104150
Objectives:	To assess whether mass media campaigns are effective in reducing alcohol-impaired driving and alcohol-related crashes.
Methodology:	Systematic review (conducted according to methods of the Guide to Community Preventive Services). Studies included had to provide objective data on one or more outcome measures related to alcohol-impaired driving e.g. single vehicle night-time crashes. Eight studies met the inclusion criteria for the review.
Key Findings:	• The median decrease in crashes across all studies and all levels of crash severity was 13 per cent. • The median decrease in injury-producing crashes, the most common crash outcome, was 10 per cent. • Most of the campaigns took place in areas with relatively high levels of enforcement and other activities to prevent alcohol-impaired driving. The effect of the campaign alone cannot be extracted, and it is not clear if the campaigns would have had similar effects without the other activities. • The results can not be generalised beyond such high-quality, high-intensity mass media campaigns. • None of the studies reviewed provides unequivocal evidence that a given campaign actually reduced alcohol-impaired driving or alcohol-related crashes.
Keywords:	Drink driving, alcohol-impaired, crashes, mass media campaigns, effectiveness, evaluation.
Comments:	Limited to campaigns providing persuasive messages to prevent drinking and driving. The 8 campaigns included now dated (conducted between 1975 and 1998).

Title:	**The Handbook of Road Safety Measures**
Published:	R. Elvik, A. Hoye, T. Vaa, and M. Sorensen (2009) Emerald Group Publishing Ltd.
Link:	Hard copy only.
Objectives:	Systematic overview of current knowledge regarding the effects of road safety measures. The book attempts to provide answers to the following questions: • Which measures can be used to reduce the number of traffic accidents or the severity of injury in such accidents? • Which accident problems and types of injury are affected by the different measures? • .What effects on accidents and injuries do the various road safety measures have, according to international research? • What are the costs of road safety measures? • Is it possible to make cost-benefit evaluations of the measures?
Methodology:	Not applicable
Key Findings:	• Meta-analysis examined the effect of drink driving campaigns on behaviour. Studies included utilised different types of media, e.g. internet, TV, radio, cinema, and some campaigns were combined with enforcement measures. • The results of the meta-analysis show that significant reductions in the number of injury accidents were found for drink driving campaigns (a decrease of 14 per cent). The effect of the campaigns was only evident when combined with enforcement.
Keywords:	Road safety, measures, evaluation.
Comments:	Thorough and detailed book.

Title:	**Meta-analysis of the Effect of Road Safety Campaigns on Accidents**
Published:	R.O. Phillips, P. Ulleberg, and T. Vaa (2011) Accident Analysis and Prevention, 43, 1204-1218
Link:	http://www.ncbi.nlm.nih.gov/pubmed/21376920
Objectives:	To determine the effectiveness of road safety campaigns, and to identify which factors describing the nature of the campaign message and how it is delivered) are associated with significant variation in campaign effect.
Methodology:	Meta-analysis and meta-regression. Sixty-seven studies were included in the meta-analysis
Key Findings:	• Road safety campaigns coincide with a 10 per cent reduction in accidents (or a 9 per cent reduction when controlling for publication bias and the variation in study outcomes between studies). • Campaign evaluations using drink-drive accidents as an outcome tend to report greater effects. • Most of the campaigns included in the analysis were accompanied by enforcement measures. • There appears to be a tendency for campaigns to have become less successful over time e.g. effects of campaigns in the 1980s had an overall accident reduction effect of 16 per cent, whilst campaigns in the 2000s had an overall accident reduction effect of 5 per cent • Campaigns may be more effective in the short term if the message is delivered with personal communication in a way that is proximal in space and time to the behaviour targeted by the campaign.
Keywords:	Meta-analysis, meta-regression, campaigns, outcomes, effectiveness.
Comments:	Uses statistical techniques to control for confounding factors.

Title:	**Effectiveness of Designated Driver Programs for Reducing Alcohol-Impaired Driving: A Systematic Review**
Published:	S.M. Ditter, R.W. Elder, R.A. Shults, D.A. Sleet, R. Compton, and J.L. Nichols (2005) Am. J. Prev. Med. 28(5S), 280-287
Link:	http://trid.trb.org/view/2005/C/760129
Objectives:	To assess the effectiveness of designated driver programs in reducing alcohol-impaired driving and alcohol-related crashes.
Methodology:	Systematic review, conducted according to the methods developed for the Guide to Community Preventive Services. Nine studies were included which evaluated either population-based campaigns that encouraged designated driver use (n=1), or incentive designated driver programs in drinking venues that provided incentives to patrons to act as designated drivers (n=8).
Key Findings:	• A 3 month campaign to promote the concept and use of designated drivers reported a 13 per cent increase in telephone survey respondents 'always' selecting a designated driver, but no significant change in self-reported alcohol-impaired driving. • Incentive programs based in drinking establishments to encourage people to act as designated drivers showed a median increase of 0.9 in the number of patrons who identified themselves as designated drivers each night after the program was implemented. • In 2 of the studies reviewed, the number of self-identified designated drivers returned to baseline immediately after the enhanced incentives were withdrawn. • All outcome measures had limited value in assessing the potential injury prevention benefits of the programmes. • There is insufficient evidence to determine the effectiveness of either campaign or incentive designated driver programmes for reducing alcohol-impaired driving and crashes.
Keywords:	Alcohol-impaired driving, designated driver programs, systematic review.
Comments:	No studies that assessed the effects of designated driver programs on alcohol-related crashes were found.

Title:	**A Review of International Evidence on the Use of Alcohol Ignition Interlocks in Drink Drive Offences**
Published:	A. Clayton and D. Beirness (2008) Road Safety Research Report No. 89, Department for Transport
Link:	http://webarchive.nationalarchives.gov.uk/20090417002224/http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme3/review.pdf
Objectives:	To inform understanding of the practical and technical issues, problems, and solutions in implementing large scale interlock schemes.
Methodology:	Evidence review of the international experience regarding implementation of alcohol ignition interlock programmes. Much of the required information was qualitative and not readily available in published documents. Four main techniques were employed: - literature review - internet review - face-to-face discussions - case studies
Key Findings:	• Interlock programmes have been shown to be effective in reducing drink-driving recidivism for both first-time and repeat offenders while the device is installed. However, there is little, if any, residual effect in preventing impaired driving after the device is removed. The main problem with the overall effectiveness of interlock programmes lies with low participation rates. • To ensure compliance with the programme, it is essential that the various violations and their associated sanctions are made clear, and that the effective monitoring of participants is implemented. It should be recognised that most offenders will commit some minor violations as they get used to the equipment. By contrast, the level of attempted circumvention in offender programmes is extremely low – often reported as less than 1 per cent. • Schemes are costed on the basis of fixed (largely set-up) and variable (mainly participant) costs. Most schemes are based upon the principle of 'user pays', with a typical cost of £500 to £800 in North America for a one-year programme. • Trends in interlock programmes are towards installing the interlock as soon as possible after the offence, dispensing with any initial period of disqualification, and adopting a criterion-based approach to completing the programme.
Keywords:	Alcohol ignition interlocks, evidence review.
Comments:	Applicable to Great Britain.

Title:	**Alcohol Ignition Interlock Programmes for Reducing Drink Driving Recidivism**
Published:	C. Willis, S. Lybrand and N. Bellamy (2004) The Cochrane Database of Systematic Reviews, Issue 3
Link:	http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD004168.pub2/pdf/standard
Objectives:	To assess the effectiveness of ignition interlock programmes on recidivism rates of drivers with prior convictions of drink driving: - The primary outcome is the recidivism rate of drivers while the ignition interlock device is installed in the vehicle; - The secondary outcome is the recidivism rate of drivers after the ignition interlock device has been removed from the vehicle.
Methodology:	Controlled trials of interlock programmes were included in the review. N=14 studies were included in the review (1 randomised controlled trial (RCT), and 13 controlled trials).
Key Findings:	• The RCT showed that recidivism was lower in the alcolock group while the device was installed in the vehicle, but the benefit disappeared once the device was removed. • In all 13 non-randomised controlled trials, the interlock group had lower recidivism than the control group. • More studies of good quality are needed to confirm the effectiveness of alcolocks in reducing recidivism. • The participation rates for interlock programmes were too low for devices to have had much impact on the drink driving population as a whole.
Keywords:	Alcolocks, effectiveness, alcohol-impaired driving, systematic review.
Comments:	Review of international studies. Only 1 randomised controlled trial included.

Title:	**Effectiveness of Ignition Interlocks for Preventing Alcohol-Impaired Driving and Alcohol-Related Crashes: A Community Guide Systematic Review**
Published:	R.W. Elder, R. Voas, D. Beirness, R.A. Shults, D.A. Sleet, J.L. Nichols, and R. Compton (2011) Am. J. Prev. Med., 40(3), 362-376
Link:	http://trid.trb.org/view/2011/C/1100489
Objectives:	To assess the effectiveness of alcohol ignition interlocks for reducing alcohol-impaired driving and alcohol-related crashes among those who have been arrested or convicted for alcohol-impaired driving.
Methodology:	Systematic review, conducted according to the methods developed for the Guide to Community Preventive Services. Incorporates Cochrane review conducted by Willis et al in 2004 (see separate reference). The majority of the interlock programs were applied to offenders who had multiple offences or high blood alcohol concentrations. The reviewed studies tended to compare offenders who had interlocks installed with a comparison group of offenders who did not have interlocks (but received licence disqualification instead). N=15 studies included.
Key Findings:	• Two studies evaluating the effectiveness of an interlock program in New Mexico found that the devices were associated with a 65 per cent lower risk of recidivism among repeat offenders, and a 61 per cent lower risk among first-time offenders. • Overall, the installation of ignition interlocks (in non-UK programs) was associated with large reductions in re-arrest rates for alcohol-impaired driving. • Following removal of the interlocks, re-arrest rates reverted to levels similar to those for comparison groups. • Limited evidence from studies that used crash rates as an outcome measure suggests that alcohol-related crashes decrease while interlocks are installed in vehicles.
Keywords:	Alcohol ignition interlocks, alcohol impaired driving, crashes, effectiveness.
Comments:	Review of international studies. There is risk of bias in comparing the groups identified in the methodology – interlock groups tend to be older, drive more, have higher incomes, and have more offences.

Title:	**An Investigation of the Usefulness, the Acceptability and Impact on Lifestyle of Alcohol Ignition Interlocks in Drink-Driving Offenders**
Published:	D. Beirness, A. Clayton, and W. Vanlaar (2008) Road Safety Research Report No. 88, Department for Transport
Link:	http://webarchive.nationalarchives.gov.uk/20120606181145/http://assets.dft.gov.uk/publications/research-and-statistical-reports/investigation.pdf
Objectives:	To examine the practicalities of setting up an alcohol ignition interlock programme in Great Britain, and assess the impact of the interlock on drink drive offenders and their families.
Methodology:	Longitudinal randomised control design, including interviews and focus groups. N=89 participants were included in the interlock programme. Trial participants had served a period of disqualification, had completed a Drink Drive Rehabilitation course, and were fully re-licensed.
Key findings:	• Participants reflected the typical demographic characteristics of drink driving offender populations. • Of the original 89 interlock participants, 39 (43 per cent) failed to complete the full 12 months. Twelve percent of the control group withdrew from the project early. • Over 90 per cent of the key events recorded by the interlock were stationary fails. Most participants (66 per cent) had fewer than three stationary fails per month. There were 328 recorded blood alcohol concentrations (BACs) over 80 mg/100 ml, corresponding to 172 potential drink driving trips. • The main issues reported by participants included being over the interlock limit the morning after drinking, delay in starting the car due to the time taken for the interlock to warm-up, and difficulties with rolling re-tests during a journey. • Despite the difficulties, there appeared to be greater acceptance of the interlock and a growing recognition of its value as the study progressed. Many indicated that it made them at least think seriously about their drinking, if not help change their drinking patterns outright. In total, 54 per cent of interlock participants reported consuming less alcohol at month 18 than at the beginning of the study, compared with 40 per cent of control participants. The difference between the two groups, however, was not statistically significant. • Given that the interlock was not used in a judicial setting, the findings may be different from those obtained when interlock use is mandated and/or participants must pay for the interlock themselves.
Keywords:	Alcohol ignition interlocks, longitudinal research.
Comments:	Evaluation conducted within Great Britain.

Title:	**Reviews of Evidence Regarding Interventions to Reduce Alcohol-Impaired Driving**
Published:	R.A. Shults, R.W. Elder, D.A. Sleet, J.L. Nichols, M.O. Alao, V.G. Carande-Kulis, S. Zaza, D.M. Sosin, and R.S. Thompson (2001) Am. J. Prev. Med, 21(4S), 66-88
Link:	http://trid.trb.org/view.aspx?id=709583
Objectives:	To assess the effectiveness of a number of laws and other community-based interventions in reducing alcohol-impaired driving and alcohol-related crash fatalities.
Methodology:	Systematic review, conducted according to the methods developed for the Guide to Community Preventive Services. N=76 studies included in the review. 'Lower blood alcohol concentration (BAC) laws for young and inexperienced drivers' was selected as a priority policy intervention for review. N=6 studies were included to examine this policy intervention.
Key Findings:	• All 6 studies analysed data from police incident reports of crashes on public roads. Median post-law follow-up time for the 6 studies was 22 months. • All 6 studies reported a post-law reduction in crashes. • The studies reported reductions in crashes of between 4 and 24 per cent, depending on the study outcome employed (e.g. fatal crashes, non-fatal injury crashes). • There was sufficient evidence that lower BAC laws were effective in reducing crashes among young or inexperienced drivers.
Keywords:	Alcohol-impaired driving, systematic review, effectiveness, crashes.
Comments:	The 6 studies described above were conducted in the U.S.A and Australia.

28 Calthorpe Road, Edgbaston, Birmingham, B15 1RP

Telephone: 0121 248 2000

Registered Charity No: 207823

www.rospa.com