PREVENTING DRUG DRIVING IN EUROPE

Policy measures for national and EU action

March 2017





Contributing Experts

ETSC gratefully acknowledges the invaluable contributions of the following experts in the preparation of this report:

Francisco Alonso INTRAS, Institute of Traffic and Road Safety, University of Valencia, Spain

Ilona Buttler, Motor Transport Institute, Poland

Sjoerd Houwing, Institute for Road Safety Research, SWOV, Member of the Scientific Advisory Board, the Netherlands

Jacqueline Lacroix, Head of Traffic Medicine and International Affairs, German Road Safety Council

Gerry Peeters, Belgian Federal Highway Police

Dr. Charles Mercier Guyon, Medical Advisor of La Prevention Routiere France

Alain Verstraete, Department of Clinical Chemistry, Microbiology and Immunology, University of Ghent

Kim Wolff, Professor of Addiction Science, Department Pharmacy and Forensic Science, Faculty Medicine & Life Sciences, King's College, London, UK

For more information

European Transport Safety Council 20 Avenue des Celtes B-1040 Brussels Tel: +32 2 230 4106 information@etsc.eu www.etsc.eu/drug-driving

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Author Laurence Atchison, PACTS

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EXECUTIVE SUMMARY

Driving under the influence of psychoactive drugs leads to deaths and serious injuries on Europe's roads. Both illicit and licit drugs can disrupt the psychological state of the driver and impair their driving performance. Using multiple drugs simultaneously, or in conjunction with alcohol, increases the risk of a collision even further.

Drug driving remains significantly less well understood than drink driving. It is only in recent years that knowledge of drug driving has begun to improve, with large scale studies such as the DRUID project beginning to reveal the scale and impact of drug driving in Europe.

This report aims to provide a summary of drug driving across Europe, drawing on the latest research to provide an overview of how drugs affect collision risk and the prevalence of different types of drugs in different road users and regions.

It summarises various approaches to combatting drug driving from around Europe and the ways in which they can be used to help tackle both drug driving itself and other underlying issues related to drug use.

Most countries already have legislation in place to deal with illicit drugs and many have introduced legislation directly aimed at drug driving. These vary in form depending on the type of drug (illicit/licit) and different penalties apply depending on the type used and the severity of impairment.

Improvements in detection equipment have helped lead to more accurate methods of screening and identifying specific substances.

Educational and awareness campaigns are used by many countries to highlight the dangers of driving under the influence of psychoactive drugs and to educate the public about the effects they can have and the consequences drug driving can lead to. These approaches can be targeted at those groups amongst which drug driving is known to be prevalent.

Rehabilitation and healthcare provide pathways for offenders to return to driving while also helping to reduce the likelihood of recidivism. Schemes vary from country to country and by the type of offender. Some forms of rehabilitation are handled primarily by driver licensing authorities, whereas others are more healthcare oriented. Recommendations have been made here based on those countermeasures and approaches shown to be most effective. These include:

- A zero tolerance system for illicit psychoactive drugs using the lowest limit of quantification that takes account of passive or accidental exposure;
- More research into the effects of common psychoactive drugs on driving behaviour to ensure countermeasures are fit-for-purpose and keep in line with evolving behaviours;
- Improved monitoring of drug use in traffic to gain more insight into its prevalence, development and trends;
- Police forces properly trained in when and how to perform drug screening (e.g. preselection based on checklist, saliva test, confirmation test) field impairment tests and use of roadside screening devices.
- Targeted education and campaigns directed at high risk groups such as young males.
- The introduction of regulated assessment and rehabilitation based on criteria or common standards.

"Illicit and licit drugs can disrupt the psychological state of the driver and impair their driving performance."

INTRODUCTION

Psychoactive drugs have a variety of effects on a person's driving performance, as they disrupt the psychological state of the driver. In recent years, a growing body of research has demonstrated the ways in which driving under the influence of psychoactive drugs has caused deaths and serious injuries on Europe's roads.

Driving under the influence of drugs is still not as well understood as drink driving. This is due to a number of reasons, including the variety of substances and their varied effects. Only a few significant transnational studies having been carried out on the issue, such as Driving Under the Influence of Drugs (DRUID), in 2012.

Many of the drugs that have a dangerous effect on driving are illegal in most countries and laws and approaches already exist to tackle general drug usage. However, laws concerning driving under the influence of these drugs have tended to be less robust.

Some drugs that impair driving are legal. They are available as prescription drugs and are taken to treat legitimate conditions and illnesses. Some people may take these drugs incorrectly, such as taking higher than recommended doses and combining multiple licit substances.

Our knowledge of the road casualty toll from driving under the influence of psychoactive drugs is growing. This report aims to provide a summary of drug driving across Europe, drawing on the latest research to provide an overview of how drugs affect collision risk and the prevalence of different types of drugs in different road users and regions.

Our knowledge of the road safety toll from driving under the influence of psychoactive drugs is growing.

By using examples of good practice from a range of countries, the report looks at a variety of countermeasures aimed at reducing drug driving rates and makes a number of recommendations for national governments and the European Union.

The term 'psychoactive drug' is used here to refer to both illicit and licit substances, excluding alcohol which is mentioned by name. Due to the scale of the topic, this report focuses mainly on illicit drugs and new psychoactive substances (sometimes known as 'legal highs'), although references to licit drugs, such as prescription or controlled medicines, are made throughout.

BACKGROUND

Historically, driving under the influence of psychoactive drugs has received far less attention than drink driving.

Drink driving is a more prevalent cause of road deaths and injuries than driving under the influence of psychoactive drugs, with the DRUID study estimating that alcohol was detected in 24.4% of seriously injured drivers and 32.8% of killed drivers, while illicit and medicinal psychoactive drugs were found in 15.2% and 15.6% respectively.¹

This is well reflected in the approaches and priorities that have been developed to tackle drink driving over the past half century, which range from legislation and enforcement to education and awareness campaigns. Alcohol is easier to detect in drivers and the effects, prevalence and consequences of drink driving are well known and have informed a wide variety of legislation and countermeasures.²

Historically, driving under the influence of psychoactive drugs has received far less attention than drink driving.

The actual scale of drug driving has only recently been monitored and revealed, and although it may appear that the prevalence of drug driving has significantly increased, experts attribute this to better survey techniques.

There has been significant recent investment and progress in road-side drug screening and improvements in detection methods and the capacity to detect a wider range of substances. These factors alongside a greater willingness to research those who drive under the influence of psychoactive drugs have led to significant advancements in how different jurisdictions address this problem. This new focus can be seen as a first step in changing attitudes and approaches towards the use of psychoactive drugs generally and how individual lifestyle choices may need to be managed via drug-driving legislation and healthcare. Nevertheless, it is important to note that more is known about drug prevalence associated with serious collisions than is known about the prevalence of driving under the influence of drugs in traffic in general.³

Major pieces of research such as the 2006-2011 DRUID project have helped to improve our understanding of the level and nature of drug driving in Europe, providing details of the prevalence of certain types of psychoactive drugs in different EU states against driving behaviour, age and location. It is important that data continue to be collected and evaluated so that European initiatives are current and meaningful.⁴ Countermeasures and approaches must therefore not only be able to tackle the problems today, but also to adapt to the evolving problems in the future.

¹ European Commission 2011, DRUID Deliverable 2.2.5, Prevalence of alcohol and other psychoactive substances in injured and killed drivers, pp. 164-7

² European Commission 2010, DRUID Deliverable 1.1.2a, Meta-analysis of empirical studies concerning the effects of alcohol on safe driving

³ EMCDDA (2009), Drugs in Focus: Responding to drug driving in Europe

⁴ European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report.

THE SITUATION IN EUROPE

Approaches to drug driving have been predominantly concerned with common illicit substances such cocaine, methamphetamine cannabis, as and methylenedioxymethylamphetamine (MDMA). However, unlike alcohol, the number of psychoactive substances is wide ranging and those that have an impact on driving performance are likely to increase.

Psychoactive drugs are difficult to define by impairment alone since different substances have different effects. Some are sedating, which can lead to drowsiness and lapses in attention, whereas others have excitatory effects which can increase alertness, confidence and impulsiveness.

Despite numerous studies demonstrating the effects of psychoactive drugs on driving ability, there is no universal agreement on how best to measure the levels of impairment that psychoactive drugs cause to the driver.⁵ However, the overwhelming majority of psychoactive drugs have the same net effect, which is a decrease in the quality of mental and physiological effort dedicated to the driving task, which sees a decrease in performance and an increase in the risk of involvement in a collision.⁶

Drugs are a general problem for all road users, however, research does focus primarily on drivers.

PREVALENCE OF PSYCHOACTIVE DRUGS IN THE **GENERAL POPULATION**

Psychoactive drugs are used across Europe, with studies showing that 88 million adults, just over 25% of 15-64 year olds in the EU, have tried illicit drugs at some point in their lives.

The most commonly used are:

- Cannabis (51.5 million males and 32.4 million females).
- Cocaine (11.9 million males and 5.3 million females).
- MDMA (9.1 million males and 3.9 million females)
- Amphetamines (8.3 million males and 3.8 million females)7

User profiles also depend on the drug type, with many being more common amongst younger people aged 15-34 (see Fig. 1). In particular, cannabis has a prevalence of around five times that of other substances.⁸ It is estimated that around 1% of European adults are daily or almost daily cannabis users with around 60% of these between the ages of 15-34.9

Medicinal drugs are also commonly detected amongst drivers, especially benzodiazepines.¹⁰

Psychoactive drug use occurs for a variety of different reasons, depending on the sought after effects associated with certain drug types. Much illicit drug use takes place in recreational settings, whereas medicinal drugs with psychoactive properties, are prescribed for well described conditions (morphine for analgesia, amphetamine for Attention Deficit Hyperactivity Disorder (ADHD) and benzodiazepines for sedation and anxiety). Controlled medicinal drugs with psychoactive properties may also be used recreationally in ways that are at odds with recognised therapeutic dosing schedules.

Despite efforts to reduce drug use, the European drug market remains resilient and the purity and potency of many drugs is increasing. Modest increases have been noted in the use of the more common drugs. Equally challenging is how best to respond to the changing market for new drugs such as Gamma-Hydroxybutyrate (GHB) and synthetic cannabinoids.¹¹



UK Department for Transport 2013, Driving Under the Influence of Drugs: Report from the Expert Panel on Drug Driving, Wolff, K., Brimblecombe, R., Forfar, J.C., Forrest, A.R., Gilvarry, E., Johnston, A., Morgan, J., Osselton, M.D., Read, L., Taylor, D., p21.

OECD/ITF 2010, Drugs and Driving: Detection and Deterrence, Summary Document, p7

⁷ EMCDDA 2016, European Drug Report: Trends and Developments, p37

⁸ EMCDDA 2016, European Drug Report: Trends and Developments, p37 ⁹ EMCDDA 2016, European Drug Report: Trends and Developments, p39

¹⁰ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p17.

¹¹ EMCDDA 2016, European Drug Report: Trends and Developments, p11

FIG. 1 Estimates of illicit psychoactive drug use in the European Union for year 2014¹²



¹² EMCDDA 2016, European Drug Report: Trends and Developments, p13.

PREVALENCE OF PSYCHOACTIVE DRUGS IN THE **DRIVING POPULATION**

The important issue is how many of these drug users are driving under the influence.

According to the DRUID project in 2012, the estimated EU mean prevalence amongst the general driving population for all investigated illicit drugs is 1.9%, and for medicines is 1.36%. In contrast, the prevalence for alcohol is 3.5% at > 0.1 g/L and 1.5% at > 0.5g/L. Combinations of drugs or medicines were found in 0.39% and alcohol combined with drugs or medicine in 0.37%.¹³ It is worth noting, however, that the DRUID project tested only for a limited number of medicinal drugs.

In a 2015 survey, 11% of respondents self-declared that they had driven after using illicit drugs at least once in the past 12 months, with 22% self-declaring that they had driven while taking medication that carries a warning that may influence their driving ability.¹⁴

In the same survey, 88% of respondents agreed that driving under the influence of drugs seriously increases the risk of an accident (78% of those aged 18-34, 89% of 35-54 and 95% of 55+). There was little variation between countries and genders.¹⁵

There is growing evidence that chronic drug users are more likely to drive under the influence of drugs than moderate drug users.

As mentioned above, people use drugs for a variety of reasons. However, some drivers may use psychoactive drugs for specific purposes. For example, professional drivers may use stimulant drugs if they need to stay awake or benzodiazepines to help them sleep. There is growing evidence that chronic drug users are more likely to drive under the influence of drugs than moderate drug users, who tend to take a more responsible approach to drug driving.16

	Substance	Weighted European mean (%)
TABLE 1	Alcohol > 0,1g/l (1)	3.5
Weighted European ean of the prevalence	Alcohol > 0,1g/l	1.5
f different substances	Illicit drugs	1.9
in the general driving population ¹⁷	Amphetamines	0.08
population"	Cannabis	1.32
No alcohol results were ole for Sweden. Alcohol- e drivers (> 0.2 g/l) were ealt with by the Swedish e, so did not take part in the survey.	Cocaine	0.42
	Opioids	0.07
	Medicinal drugs	1.4
	Benzodiazepines	0.90
	Zopicione and zolpidem	0.12

NB: The prevalence values for named drugs refer to the occurrence of those drugs alone; drug-drug combinations are given separately. "Different drug classes" includes different combinations of drugs

With established illicit psychoactive drugs, their usage in the overall population can be used to model their potential use amongst drivers and a larger number of surveys of drivers have been carried out to this end. When it comes to new psychoactive substances, the picture is much less clear.

Given the lack of available information, it is harder to calculate the number of drivers that might be using new psychoactive substances. Fewer surveys have been carried out, although the results of some are shown in Table 2.

TABLE 2	Drug	Country	Year	Percentage/number
Overview of the	Desoxypipradol (2-DPMP)	Finland	2010-2012	1.7%
prevalence of some	Fluoroamphetamines	Denmark	2009-2011	15 cases
ew synthetic drugs drivers suspected	GHB	Germany		2.0%
driving under the	GHB	Germany		2.0%
influence of drugs	GHB	Norway	2000-2007	25 cases
Abbreviations:	GHB	Sweden	1998-2007	548
na-hydroxybutyrate;	MDPV	Finland	2009	5.7%
lenedioxypyrovalerone.	Phenazepam	Finland	2010-2011	3.5%
	Synthetic cannabinoids	Norway	2011	3%. All samples contained other drugs as well

¹³ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p6.

14 Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention, p20.

15 Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention, pp.17-19

¹⁶ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p6.

¹⁷ EMCDDA 2014, Drug Use, Impaired Driving and Traffic Accidents, p27.

of different substa in the general dr populat (1) No alcohol results

available for Sweden, Alc positive drivers (> 0.2 a/l) dealt with by the Sw police, so did not take p the su

GHB, gamma MDPV, methylened

mean of the preva

Member States

The nature of drug driving varies across the European Union, and this is largely dependent on the ease of availability, which reflects prevalence of certain drug types in specific regions.

As mentioned, the estimated EU mean for all investigated illicit drugs in the general driver population is 1.9%, however, this was limited to amphetamines, cocaine, THC (cannabis) and illicit opiates.¹⁸ This figure is considerably lower than similar estimates for regions such as North America.¹⁹

Figures for individual countries range from 0.2 - 8.2%.²⁰ As with elsewhere across the globe, the most frequently detected drug in most countries is cannabis with a

prevalence of 1.32%, (ranging from 0.0 – 5.99%), followed by cocaine with a prevalence of 0.42% (ranging from 0.0 - 1.45%).²¹

Research shows that around 4% of drivers in Europe participate in traffic after having taken psychoactive drugs and/or controlled medicines (excluding GHB and antidepressants).²² At 3.4% this share was lowest in the Netherlands, with traces of drugs found in around 2.8% of car drivers while 0.6% had traces of controlled psychoactive medicines in their body.²³

Figures for self-declared driving under the influence of drugs are higher, but correlate with other research.²⁴ These figures range from 3% in Finland to 16% in France (Fig. 2), with an EU average of 11%.^{25,26}



Across Europe, further information is required about drug use patterns in drivers. Knowledge of preferred combinations of drugs continues to evolve and the range of substances available to users is widening. The ethnicity of the driving population and socio-economic factors also serve to determine the types of drugs detected in roadside screening programmes in individual countries.

¹⁸ European Commission 2011, DRUID: Driving Under the Influence of Drugs, Deliverable 2.2.3, Prevalence of alcohol and other psychoactive substances in drivers in general traffic, p20

¹⁹ OECD/ITF 2010, Drugs and Driving: Detection and Deterrence, Summary Document, p8

²⁰ European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, p80.

²¹ European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, p80.

²² SWOV 2015, Factsheet: The use of drugs and medicines behind the wheel, p1.

²³ SWOV 2015, Factsheet: The use of drugs and medicines behind the wheel, p1.

²⁴ Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention, p6

²⁵ Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention, p22.

²⁶ Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention, p22.

Age and Gender Groups

Drug driving rates also vary according to age and gender. In general, psychoactive drug use is largely concentrated amongst young people aged 15-34 and males tend to use psychoactive drugs more than females.²⁷ Despite an increase in the prevalence of illicit drug use amongst young people in the late 1990s, it has remained largely unchanged since 2003.²⁸

Levels of self-declared drug driving in the past twelve months were higher for people aged 18-34, at 21% for driving after using illicit drugs and 29% for driving while taking medication that may influence driving ability, compared to figures of 11% and 22% for all ages.²⁹

Self-declared drug driving (for both illicit drugs and medicines) is higher amongst males than females.³⁰ In the UK, 3820 individuals were apprehended on suspicion of driving under the influence of drugs between 4 March 2014 and 31 May 2016 and 94% of these cases were male.³¹

Psychoactive drug use is reported to be highest amongst young male drivers, with one study recording that a total of 8.1% in this group tested positive for the use of one or more types of drugs.³² This is reflected in the fact that amongst drivers involved in collisions, illicit drugs are mainly detected among young male drivers.³³

Psychoactive drugs are found in young drivers at all times of the week, but especially at the weekend, which fits established patterns of driving and collisions amongst young people.³⁴

In contrast, psychoactive controlled medicines are mainly found among middle aged men and older females, during daytime hours.³⁵ Older people are more likely to use benzodiazepines, often as a prescribed drug.

There are changes emerging in psychoactive drug use with more 30-35 year olds using illicit psychoactive drugs and general drug use, including alcohol misuse, continuing into older age.

HOW DO PSYCHOACTIVE DRUGS AFFECT ROAD USERS?

The consumption of psychoactive drugs before driving has a negative impact on a person's ability to drive by disrupting normal cognitive behaviour and psychomotor functioning. Psychoactive drugs affect a number of aspects important to the driving task, such as reaction times and vehicle control and can also lead to greater risk-taking and changes in risk-and self-perception.³⁶ This is heightened when multiple psychoactive drugs are combined or used in conjunction with alcohol.

Some psychoactive drugs actually provide a false sense of safety, conferring on the driver an elevated level of confidence in driving ability.

The general public are generally less aware of the consequences of driving under the influence of psychoactive drugs than they are about drink driving and often do not realise that there are acute, negative dangers associated with this type of behaviour.

The effects of psychoactive drugs are complex and varied. Some psychoactive drugs (the stimulants) actually provide a false sense of safety, conferring on the driver an elevated level of confidence in driving ability, whereas other drug types such as benzodiazepines and opioids lead to drowsiness. Stimulant use is also associated with driving too quickly (speeding), taking unnecessary risks (jumping traffic lights, lane-switching etc.) and poor reaction-time (particularly following bingeing).

Some drivers believe that taking psychoactive drugs makes them a better driver despite there being little scientific evidence to support this belief. Chronic drug users may feel that drugs have very little effect on their driving ability.³⁷ The impairment effects of psychoactive drugs can also be increased by other conditions such as sleep deprivation.³⁸

There is a growing number of new psychoactive substances available today that are intended to mimic the effects of established illicit drugs such as cannabis and MDMA. They can have serious health effects, with some being considerably more toxic than other illicit drugs, leading to poisoning and death.³⁹ The extent to which new psychoactive substances are being used by drivers is not well described and requires further research.

³⁴ ETSC 2016, Reducing Casualties Involving Young Drivers and Riders in Europe, p16.

²⁷ EMCDDA 2016, European Drug Report: Trends and Developments, p38

²⁸ ESPAD 2015, Results from the European School Survey Project on Alcohol and Other Drugs

²⁹ Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention, p24.

³⁰ Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention, pp. 17-19

³¹ Wolff K, Agombar R, Clatworthy A, Cowan D, Forrest R, Osselton D, Scott-Ham M and Johnston A. (2017) Expert Panel Review of alternative biological matrices for use as an evidential sample for drug driving. Reference RM4825 SB-2988, Department for Transport, London, UK. In press March 2017

³² SWOV 2015, Factsheet: The use of drugs and medicines behind the wheel, p3.

³³ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p19.

³⁵ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p19.

³⁶ SWOV 2015, Factsheet: The use of drugs and medicines behind the wheel, p3-4.

³⁷ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p23.

 ³⁸ European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, p80.
³⁹ EMCDDA 2016, European Drug Report: Trends and Developments, p12

HOW DO PSYCHOACTIVE DRUGS AFFECT COLLISION RISK AND KSI (KILLED AND SERIOUSLY **INJURED) RATES?**

Driving under the influence of psychoactive drugs increases the risk of being involved in a collision.⁴⁰

Psychoactive substances are regularly detected in drivers killed or injured in collisions, and at a higher rate than they are detected among the general driving population.⁴¹

Relative risk of being killed or seriously injured in a collision for various drugs

- Cannabis and illicit opiates:1-3 times greater
- Cocaine: 2-10 times greater

Amphetamines (alone): 5-30 times greater

(SWOV 2015, Factsheet: The use of drugs and medicines behind the wheel. p1.)

The prevalence of illicit drugs in the general driving population has been estimated at 1.9%, with medicines at 1.36%.⁴² However, the prevalence amongst killed drivers is higher, although estimates do vary between countries. For example, studies have put the level at 8.8% in Spain and 8.1% in Sweden, whereas it is only 0.5-1% in the Czech Republic.

The DRUID project surveyed the prevalence of alcohol, illicit psychoactive drugs and medicines in drivers seriously injured or killed in nine European countries (Tables 3-6). Clearly, alcohol is still a much bigger problem, but driving under the influence of psychoactive drugs is also a significant issue.

TABLE 3		Range (seriously injured)	Range (killed)
Use of alcohol among	Alcohol	14.1 - 30.2%	15.6 - 38.9%
drivers seriously injured or killed in Europe			

TABLE 4

Use of illicit drugs among drivers seriously injured or killed in Europe

Illicit drug groups	Range (seriously injured)	Range (killed)
THC (and/or THC-COOH)	0.5 - 2.2%	0.0 - 1.8%
Cocaine (and/or benzoylecgonine)	0.0 - 1.3%	0.0 - 0.0%
Amphetamines	0.0 - 1.1%	0.0 - 2.1%
Illicit opiods	0.0 - 0.7%	0.0 - 0.0%

TABLE 5

Use of medicines among drivers seriously injured or killed in Europe

Medicine groups	Range (seriously injured)	Range (killed)
Benzodiazepines	0.0 - 2.3%	0.0 - 5.2%
Medicinal opioids	0.0 - 5.7%	0.6 - 1.5%
Z-drugs	0.0 - 2.1%	0.0 - 2.8%

TABLE 6

Use of combinations of substances among drivers injured and killed in Europe 43

Combinations	Range (seriously injured)	Range (killed)
Alcohol with drugs and/or medicines	2.3 - 13.2%	4.3 - 7.9%
Combinations of drugs and/ or medicines	0.5 - 4.3%	0.4 - 7.3%

⁴⁰ Elvik, R. 2013, Risk of road accident associated with the use of drugs: A systematic review and meta-analysis of evidence from epidemiological studies, Accident Analysis and Prevention 60, p264

⁴¹ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p29

⁴² European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, p17.

⁴³ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, pp.16-17.

Notably, the use of illicit drugs alone is not frequently detected in seriously injured and killed drivers.⁴⁴ Rather, illicit drugs are usually found in combination with alcohol, with cannabis being the most common, followed by cocaine and amphetamines.⁴⁵ This can have severe, negative effects on driving. The injury risk of drugs combined with alcohol is comparable to the risk of alcohol consumption alone at a blood alcohol concentration (BAC) of 1.2 g/L.⁴⁶

Similarly, the use of multiple drugs often combined and used at the same time is known to substantially increase the risk of a collision compared to the use of one psychoactive drug and is frequently found amongst those drivers killed and seriously injured (Table 6).⁴⁷

Enhanced data collection would improve knowledge of the current impact of drug driving and also enhance our understanding of how it may be changing over time.

Data such as that displayed in Tables 3-6 also shows the important differences between substances. Despite the greater prevalence of cannabis in drug drivers, it is estimated that amphetamines are responsible for around half of all illicit drug related road deaths, with cannabis estimated to have caused only one fifth.⁴⁸

Unlike alcohol, the link between the blood concentration and the effect is not well-understood for all drugs. Depending on the class, a very small dose can lead to very high levels of risk (e.g. Lysergic Acid Diethylamide, LSD), whereas for some drugs, quantities significantly above the therapeutic range are required (e.g. amphetamine).⁴⁹

Post-collision investigation is the source of much of the information on drug driving, however, the small number of Killed and Seriously Injured (KSI) means that there is still only a small amount of data being collected. Enhanced data collection would improve knowledge of the current impact of drug driving and also enhance our understanding of how it may be changing over time.

⁴⁴ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p6.

⁴⁵ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p17.

⁴⁶ European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, p80

⁴⁷ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p25.

⁴⁸ World Health Organisation 2016, Drug use and road safety: a policy brief, p3.

⁴⁹ European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, p80

COUNTERMEASURES

There are a range of countermeasures available to help tackle those who drive under the influence of psychoactive drugs. Legislation and enforcement can be used to discourage drug driving and set limits (usually in whole blood), by which drivers can be assessed. Education and public campaigns can help increase awareness of the dangers of driving under the influence of psychoactive drugs. High risk driver schemes, healthcare and rehabilitation programmes can be used to address underlying problems associated with problematic drug use and to help reduce the likelihood of recidivism amongst offenders.

Unfortunately, there is less information on drug driving than there is for drink driving. Furthermore, successful measures against drink driving do not ensure success when applied to drug drivers. More research and evaluation is needed into the effects, positive and negative, of drug driving countermeasures, as it is only by doing so that approaches can be optimised.

LEGISLATION AND ENFORCEMENT

Legislation

The most direct way of addressing psychoactive drug driving is through legislation and its proper enforcement. There has been increasing attention by European states on the issue of psychoactive drug driving and many countries have put in place measures to deal with this problem and to restrict it. There are three key options which are commonly used by policymakers:

- Legal limits, also known as 'per se' laws: these establish a fixed substance limit, similar to BAC levels for drink driving. Any driver detected with a substance reaching or exceeding the legal limit is considered to have broken the law. Legal limits are commonplace and have been shown to work well.
- 2. **Zero tolerance laws:** these set legal limits with a substance concentration set at the laboratory limit of detection (LOD), or the lowest limit of quantification (LLOQ). This means that any driver with a detectable amount of a relevant psychoactive substance is considered to have broken the law. The limit set for the LLOQ approach is usually higher than the LOD.

3. **Impairment legislation:** in each case it must be proven that the skills of the driver were adversely affected by a specific psychoactive drug. Signs of impairment are usually observed and recorded by the police when they stop a driver. Most countries use a fixed testing protocol (Field Impairment Test), for police to follow.

Each option has strengths and weaknesses and suitability depends on the types of substances in question and existing legislation on alcohol and drug use in general. For instance, controlled psychoactive medicines can be difficult to legislate for, as the therapeutic range may be different for different conditions and the effects relating to driving impairment may vary. Therefore, impairment legislation is often used in combination with per se or zero tolerance legislation.

Regarding illicit drugs, the matter is often simplified because production, or use is strictly prohibited and a zero tolerance approach is used.

A variety of different methods are used by different countries with some favouring impairment legislation, some using zero tolerance or legal limits and some using a combination of both. The combined approach allows authorities to have clear limits for specific substances (particularly for illicit drugs), while also allowing them to address drivers who they believe are impaired by psychoactive drugs but under the legal limit, or impaired by drugs that are not controlled and which have no legal limit.

Governments may approach licit and illicit drugs differently (such as in the UK), with some nations considering it to be very important to have a zero tolerance approach towards illicit drugs (such as in Italy, Finland and the Czech Republic).

The Netherlands intends to use legal limits for driving under the influence of psychoactive drugs. This will be based on behaviour-related limits for the use of a single drug, or single use, and zero limits for combination use. The behaviour-related cut-offs will be the limits beyond which drugs affect the ability to drive and will be set so that the effect on driving ability is similar to the legislative limits of 0.5 g/l for alcohol.⁵⁰

Police forces are being trained to identify clinical signs of impairment based on a checklist. If three or more signs are identified, they can then demand a saliva test. If

⁵⁰ SWOV 2015, Factsheet: The use of drugs and medicines behind the wheel, p4.

positive, (or negative but with many signs of recent drug use), police will then demand a blood test.

This is in keeping with academic recommendations from the DRUID studies that the risk threshold for drugs should reflect the impairment equal to that of 0.5 g/l BAC where possible (or a similar convenient legal BAC limit).⁵¹ Lower risk thresholds can be applied for combined psychoactive drug use and psychoactive drug use and alcohol.⁵²

In 2012 Norway adopted legal limits for non-alcoholic psychoactive drugs, which led to the number of expert witnesses appearing in court to fall by almost half. Numerous cases have since been prosecuted without the need for an expert witness and based solely on the reported drug concentration.⁵³

The UK government recently upgraded drug driving legislation for England and Wales. Although it continues to be the case that it is illegal to drive when impaired by any substance, section 5A (inserted into the Road Traffic Act 1988 by the Crime and Courts Act 2013) set lowest limit of quantification (LLOQ) levels for the presence of eight illicit psychoactive drugs, with higher risk-based limits set for nine controlled psychoactive medicinal drugs. The LLOQ approach was designed to take account of accidental or passive drug exposure. This model represents a combination of the three legislative types: zero tolerance, per se limits and an impairment approach.

The Republic of Ireland have, in the 2016 Road Traffic Act, added a per se offence for cannabis, cocaine and heroin. Again a zero tolerance limit approach has been adopted for these drugs. The long existing offence of the presence of an intoxicant and evidence of impairment remains in place.

Some jurisdictions have a lower legal limit for alcohol when detected in the presence of a psychoactive drug. For instance, the state of Ohio, USA has a lower cut-off for cannabis (THC-COOH) when detected in combination with alcohol or other drugs.

Robust legislative frameworks for dealing with drug driving can be effective and help reduce offending and the costs associated with prosecution. In future, the potential implications of legalisation and the relaxation of drug laws on the effectiveness of drug driving laws will need to be closely monitored.

Penalties

Punishments for driving under the influence of drugs vary and may be similar to punishments for drink driving. In the majority of EU countries, drug driving leads to withdrawal of the driving licence, usually for a temporary period.⁵⁴ Under the new legislation in the UK, drug drivers face an unlimited fine, up to six months in prison and a minimum one-year driving ban. In the Republic of Ireland the presence of an intoxicant with evidence of impairment is penalised with a four-year driving ban.⁵⁵ The aforementioned new per se drug offence is penalised with a one-year ban as it is a strict liability offence and impairment does not have to be proven.

Psychoactive drug driving laws in Spain have a dual approach, in that driving under the influence of a psychoactive drug is considered both an administrative and a criminal offence. For the administrative offence, a person with any amount of drugs (excluding prescribed medicines for medical purposes) is punished with a fine under a zero-tolerance system. The criminal offence is based on an impairment system and results in imprisonment or a fine.⁵⁶

The Czech Republic uses a similar system based on levels of impairment and licence withdrawal periods vary depending on the type of offence, with six months to a year for an administrative offence and one to ten years for a criminal offence.

Norway uses sanctions that are proportional to the offender's salary, with fines escalating as the drug concentration increases.⁵⁷

In France, punishments for driving under the influence of illicit psychoactive drugs are similar to those for drink driving: a temporary withdrawal of the licence and a fine of \in 4500 (\in 9000 if combined with alcohol, with up to two years in prison and a minimum two months driving ban). Cancellation of the driving licence is automatic in cases of recidivism and points are always deducted from the driving licence. Norway uses sanctions that are proportional to the offender's salary, with fines escalating as the drug concentration increases.

In Italy, penalties vary depending on the circumstances. For example, the basic penalty is a fine of \in 1500 - \in 6000, imprisonment for six months to a year and the suspension of the driving licence for one to two years. If the vehicle

⁵¹ European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, p85/ SWOV 2015, Factsheet: The use of drugs and medicines behind the wheel p4 (Netherlands)

⁵² European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, pp.88-92.

⁵³ Driving under the influence of non-alcohol drugs: Legal limits implemented in Norway, p3.

⁵⁴ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p41.

⁵⁵ UK Government Drug Driving Law

⁵⁶ World Health Organisation 2016, Drug use and road safety: a policy brief, p8.

⁵⁷ Driving under the influence of non-alcohol drugs: Legal limits implemented in Norway, p 3.

involved belongs to a person unrelated to the crime, the suspension period is doubled. If the driver causes a collision the basic penalty is doubled. In the event of a fatal collision, penalties range from eight to twelve years in prison and this increases by half (with a maximum of eighteen years) if more than one person is killed, along with a licence revocation for 15 years.

Licence withdrawal is considered a more effective deterrent than other legal sanctions, such as fines and imprisonment. However, its effectiveness is deemed limited, with temporary suspension between three and twelve months seen as the optimum period of suspension.⁵⁸ Longer periods of suspension may lead to people choosing to drive without a licence.

Enforcement

Legislation and penalties can only be effective when they are enforced. Indeed, the primary general deterrent factor when it comes to drug driving is the perceived risk of detection.⁵⁹ Amongst the general driving population, only 11% think that on a typical journey, the probability of an illicit drugs test by the police is big or very big.⁶⁰ Therefore, it is crucial that enforcement itself is carried out properly and visibly.

Enforcement can be separated into two forms.

The first is **roadside screening**. Drivers suspected of driving under the influence of psychoactive drugs are stopped by police and, depending on the legislation in place, assessed and tested by police using impairment protocols and drug-testing equipment. If they test positive, a second sample may be collected for evidential analysis or the individual may be taken to the police station in order to provide an evidential sample.

However, as discussed above, the detection of psychoactive drugs in drivers can be difficult. Unlike alcohol, screening and measuring for psychoactive substances is more complicated, expensive and time consuming (taking minutes rather than seconds). Long stops and checks can quickly become costly. In some cases, if a driver has already tested positive for drink driving, a drug screening test may not be performed (even if it may be necessary), due to the reasons mentioned above.

It is important that the technology and protocols used in enforcement are well tested before fully implementing them. European technical standards can be introduced to help standardise the technology used in screening and testing.⁶¹

Enforcement varies between states and within states and is heavily dependent on both human and financial resources as well as the abilities and authorities of individual police forces. In a 2015 survey, 4% of respondents across Europe reported being checked by the police for the use of drugs or medication at least once in the past 12 months. However, the variation between countries was substantial, ranging from 0% of respondents in Finland to 7% in France.⁶²

In the UK, each regional police force chooses how much of their budget to spend on drug screening kits. Local police must then decide how to best use the number of kits they have.

In some countries, such as Norway, the police have the authority to conduct random roadside drug screening tests of drivers.⁶³ In others, the police identify those drivers they wish to screen.

The skill of police in identifying potential drug drivers is also important as the general focus on drink driving can lead to those driving under the influence of psychoactive drugs often being missed or ignored. Police should not be reluctant to make a judgement based on a suspicion of psychoactive drug driving.

Similarly, police must be careful not to incorrectly identify non-impaired drivers as suspected drug-drivers. In Sweden, it has been shown that about 20-25% of all drivers suspected by the police of being drug impaired have been proven to be clean following laboratory analysis of urine and blood samples.⁶⁴

The location of roadside screening can also be used to maximise its potential, for example, some countries target environments where psychoactive drug use may be common, like night clubs. International borders may provide another screening location, but this can be complicated by variations in national drug driving laws.

The second form of enforcement comprises **postcollision forensic testing**, which sees far more detailed information collected on individuals involved in a collision including details of the various substances they have taken. This information can then be used as

⁵⁸ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p42.

⁵⁹ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p42.

⁶⁰ Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention, p25.

⁶¹ Efforts are being made by MHF in Sweden and MA in Norway to introduce a European technical standard for oral fluid testing equipment.

⁶² Torfs, K., Meesmann, U., Van den Berghe, W., & Trotta, M. (2016). ESRA 2015 – The results. Synthesis of the main findings from the ESRA survey in 17 countries. ESRA project (European Survey of Road users' safety Attitudes). Brussels, Belgium: Belgian Road Safety Institute, p34.

⁶³ Norwegian Road Traffic Act Section 22a

⁶⁴ Memorandum : "Ethical Council considerations regarding the introduction of screening instruments for drugs in the form of saliva sampling", Swedish Police 2013

evidence and to help determine penalties and inform wider discussions.

Different countries have different rules on the amount of information that can be collected as part of postcollision investigation. For example, in some jurisdictions like Finland, all killed drivers are tested for psychoactive drugs, whereas in others, only those suspected of driving under the influence of psychoactive drugs are tested.

In both forms of enforcement, proper reporting and investigation of incidences of drug driving is needed to help maintain up-to-date information and statistics.

Detection and Technology

Different legislation and enforcement techniques determine the type of technology and equipment used to screen and test for drugs. The technology available also determines the types of legislation and substance thresholds used.

Drug limits in blood can be set in many ways:

- Laboratory limit of detection/analytical cut-off: In this case the limit is not necessarily associated with the effects or impairment caused by a drug, (although this can coincidentally be the case for some drugs). Where zero tolerance per se laws have been implemented laboratory limits of detection are often applied.
- Risk thresholds/Lower effect limits: These levels are normally higher than the laboratory LOD and are at a level where there is evidence that there is an increased risk of impairment or the lowest concentration at which the effects of a drug are observed.
- Impairment limits: These limits are used where there is evidence of significant impairment at or above these limits.
- Supratherapeutic limits: These limits are applied where medicines are prescribed and allow for the legitimate use of medicines by drivers. In the case where the driver is taking the medicines correctly they should be within the normal therapeutic range of the drug in blood and should not exceed the supratherapeutic levels for these drugs. These levels can be used in conjunction with impairment evidence if necessary to determine whether an offence has been committed.

Roadside screening is usually carried out using a mouth swab (oral fluid test) which can detect for the presence of certain psychoactive drugs. Some jurisdictions use oral fluid to conduct a more thorough test, in a laboratory, following a positive screening test. Laboratory tests quantify individual substances in the person who has tested positive. Methods will vary depending on local legislation and the substances in question, some states such as the Netherlands using blood for confirmation tests.

Confirmation (evidential) tests conducted in whole blood are currently the gold standard and more detailed information about the pharmacological state of the individual can be gained from blood analysis, although collecting blood samples at the roadside can be difficult.

Accurate, reliable and widespread testing can yield results. Following the UK's introduction of new drug driving laws, combined with the use of drug-screening devices, within six months drug driving arrests had increased by 600%.⁶⁵

It is important that screening and testing is evenly distributed across a jurisdiction. In the Republic of Ireland in 2017, 86 police stations are being equipped with permanent drug testing equipment and these will be evenly spread across the state. An additional 50 sets of equipment will be made available for mobile use at the roadside.

The standardisation of technology and equipment across a jurisdiction is crucial. This can be done through type approval schemes. Without a standardised system, trials may have to rely on expert assessments and results can be invalidated. Such problems have been seen in Italy, resulting in calls for a revision of the Road Code in order to address the issue.

EDUCATION AND CAMPAIGNING

As with many other forms of impairment and distraction, driving under the influence of psychoactive drugs is addressed by many countries through educational and awareness campaigns.

Even if an individual is aware that driving under the influence of psychoactive drugs can be illegal, they may not be aware of the specific effects that drugs may have on them and their driving ability. Conversely,

some drug users may think that their driving performance will be improved after drug use, such as more relaxed with cannabis or an improved reaction time with cocaine use.

Different messages can be crafted for different target groups such as the general public, licit and



⁶⁵ Drug Driving, UK Department for Transport

illicit drug users, young people, teachers and medical practitioners and other professionals. It is also important that policymakers, legislators and the judiciary all have a good understanding of the key facets of driving under the influence of psychoactive drugs.

Unfortunately, it is difficult to assess how effective education and campaigns are. Full evaluations are uncommon and often inconclusive. However, surveys are often conducted, such as one in Spain that found that 94% of respondents said they were "sufficiently or well-informed" about drug driving prevention methods.⁶⁶

Social disapproval is considered to have a greater impact on the prevalence of drug driving than formal legal consequences.⁶⁷ Therefore, ensuring that the general population is aware of the dangers of drug driving is likely to help reduce its prevalence, as has been seen with drink driving. Visible roadside testing can serve to educate the public while also acting as a deterrent.

Ensuring that people know the dangers of drug driving is as important as ensuring that they know it is illegal.

Given the prevalence of drug use amongst young people, and the fact that young people are more likely to be involved in a collision, many drug driving campaigns target young adults. Groups such as Responsible Young Drivers in Belgium provide information for young people on drug driving laws.⁶⁸ Young people can also be educated about drug driving as part of road safety training at school. One approach is to explain to them the consequences of drug driving and the ways in which this may hinder their prospects as they become young adults.

In the UK, the government funded road safety campaign THINK! has recently produced adverts about drug driving that feature young people in situations involving alcohol and drugs, emphasising the potential consequences of the recent changes to the drug driving law, such as the impact on relationships with friends and family and losing their licence.⁶⁹ Evaluation of a media campaign aimed at 17-34 year old males found that recognition had been positive and awareness of the consequences of drug-driving had also increased.⁷⁰

As peoples' media consumption changes, so too do the methods of messaging target groups. For example, the THINK! Campaign videos, which target young people, are often shown in cinemas or in the evenings on television and also appear on social media websites, as do other internet based viral campaigns. Ensuring that people know the dangers of drug driving is as important as ensuring that they know it is illegal, especially as discussions about legalisation continue.

Healthcare professionals need to help patients to understand the effects of psychoactive controlled drugs on their driving.



particular, healthcare In professionals need to help patients understand to the effects of psychoactive controlled drugs on their driving. For example, labelling information on medicines can also be used to denote drivingrelated side-effects.71 France employs a three category labelling system, which uses yellow, amber and red warning

symbols to advise medicine users about the risk posed by driving under the influence of specific licit psychoactive substances.⁷²

Those who drive for a living may also need help with understanding drug driving legislation particularly if psychoactive drug use plays a role in their driving behaviour (to stay away on long-haul journeys or maintain concentration/alertness during shift work)⁷³. Education and advice from employers, along with clear guidelines and policies could help to reduce the prevalence of psychoactive drug use amongst professional drivers.

Education for drug driving offenders usually takes part during rehabilitation and awareness courses which are discussed further in the section below.

⁶⁶ Fundación de Ayuda contra la Drogadicción (FAD) and FUNDACIÓN MAPFRE Area of Prevention and Road Safety (2016). Driving and Drugs. Underlying Factors in Risk Behaviour.

⁶⁷ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p42.

⁶⁸ Responsible Young Drivers

⁶⁹ THINK! Drug Driving

⁷⁰ World Health Organisation 2016, Drug use and road safety: a policy brief, p9.

⁷¹ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p31.

⁷² European Commission 2008, DRUID Deliverable 4.1.1, Review of existing classification efforts, pp.10-11.

⁷³ ETSC 2010, PRAISE Report 3: Fitness to Drive

REHABILITATION AND HEALTH CARE

Rehabilitation is provided for drug driving offenders as a path for them to return to driving while also attempting to reduce the likelihood of reoffending. Rehabilitation is commonly provided by private organisations, following national guidelines, and can be voluntary or compulsory, depending on the country and offence in question.

In some countries, these schemes are responsible for determining a person's 'fitness to drive' once again. Offenders will undergo assessments of their medical and psychological fitness and be judged on other factors such as previous offences and the severity of those offences. In other countries, such as the UK, this decision remains the responsibility of the driver licensing authority.

An assessment of drug (and drink) driving rehabilitation schemes, carried out as part of the DRUID project, found that they do help to reduce recidivism and prevent people from impaired driving. Importantly, they serve to restore mobility in a safe way.⁷⁴

Rehabilitation schemes for drink drivers have been found to be very successful and are estimated to have an average recidivism reduction rate of 45.5%. The actual rates for individual countries varied from 15.4% to 71.9%.⁷⁵

It is these drink driving schemes that have formed the basis for drug driving rehabilitation schemes.⁷⁶

In 2014, amendments to the Danish law saw the extension of existing drink driver rehabilitation to drug drivers. The mandatory course comprises four three-hour classes and costs the driver 3200 kr (\in 430). Drivers must complete the course before taking the driving test to regain their licence.⁷⁷

There is very little information on the effectiveness of drug driver rehabilitation courses, both within Europe and beyond. This is because such initiatives are fairly new and there are usually a very small number of participants.⁷⁸

Drug driver rehabilitation courses that do exist have a number of similar aspects. For example, they have different types of remedial interventions for different types of offenders. They also include educational and therapeutic components and can be considered a potential prerequisite to reinstating a driver's licence.⁷⁹ In EU legislation, people who are considered dependent on psychoactive drugs, or who regularly abuse them, are not considered fit to drive.⁸⁰ Such individuals may receive assistance from the general healthcare system rather than programmes specifically for drivers. A medical certificate from a doctor may be required for a person to regain their licence. However, this is not the case in all countries and stronger links between the healthcare system and driver rehabilitation programmes may be needed.

Drug rehabilitation needs to be very specific as different types of offenders will need different approaches, determined by levels of dependence and the types of substances used. This can lead to much higher costs when compared to alcohol rehabilitation.

Ensuring that health services are equipped with effective strategies for dealing with drugs and driving can help to reduce the likelihood of people choosing to drive under the influence of drugs. However, there is no standard approach across Europe, with variations in the level in the system at which these strategies are administered. The matter is further complicated by issues of confidentiality.

In some countries, such as France, it is forbidden for medical professionals to pass relevant patient information on to driving and licensing authorities whereas in others, like Italy and Finland, it is compulsory.

In the UK, drug-dependent drivers are themselves responsible for reporting to the licensing authorities, although guidance is now being given to medical professionals in the UK on how better to deal with this issue.⁸¹

Belgium recently proposed a change to laws to allow judges to suspend a driver's licence if they suspect a drug problem, without requiring a prior driving offence.

Effective communication between healthcare professionals and driving and licensing authorities can also help to address drug use in general, as drug driving detection naturally includes the detection of illicit substances.

⁷⁴ EMCDDA 2012, Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project, p44.

⁷⁵ European Commission 2008, DRUID Deliverable 5.5.1: State of the Art on Driver Rehabilitation: Literature Analysis and Provider Survey, p275.

⁷⁶ European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report, p55.

⁷⁷ '1200 narkobilister skal på skolebænken', Århus Stiftstidende 26 March 2015

⁷⁸ European Commission 2008, DRUID Deliverable 5.5.1: State of the Art on Driver Rehabilitation: Literature Analysis and Provider Survey, p276-277.

⁷⁹ European Commission 2008, DRUID Deliverable 5.5.1: State of the Art on Driver Rehabilitation: Literature Analysis and Provider Survey, p277.

⁸⁰ European Commission 2008, DRUID Deliverable 5.5.1: State of the Art on Driver Rehabilitation: Literature Analysis and Provider Survey, p279.

⁸¹ UK Driver and Vehicle Licensing Agency, Assessing Fitness to Drive

RECOMMENDATIONS

Driving under the influence of psychoactive drugs has caused many deaths and serious injuries on Europe's roads. Studies such as the DRUID project have helped to improve our understanding of drug driving in Europe,⁸² providing details of the different prevalence of certain types of psychoactive drugs in different states against driving behaviour, age and location, but continued data collection is important so that European initiatives are current and meaningful.

A variety of different methods are used by different countries with some favouring legislation based on impairment, others setting zero tolerance or legal limits, and some using a combination of both. Discussion and evaluation of the different approaches taken should form an important part of the European debate on drug driving.

LEGISLATION

- Introduce a zero tolerance system for illicit psychoactive drugs (using the lowest limit of quantification) that takes account of passive or accidental exposure.
- Consider the potential ramifications of drug legalisation on drug driving.
- Ensure drug driving legislation can be updated to keep track of new illicit drugs.

ENFORCEMENT

- Development by the European Commission of common standards for roadside psychoactive drug driving enforcement.
- Increase enforcement levels and penalties for driving under the influence of psychoactive drugs, especially in areas that currently have low levels of enforcement. But this should not be at a cost to drink driving enforcement.
- Ensure police forces are properly trained in when and how to perform drug screening (e.g. preselection based on checklist, saliva test, confirmation test) field impairment tests and use of roadside screening devices.
- Develop intelligence to enable targeted enforcement for high risk groups, particularly:

- Young males;
- Communities where drivers combine consumption of illicit drugs and alcohol and/or multiple illicit drugs;
- Communities where controlled psychoactive medicines are used to aid driving performance.

EDUCATION AND CAMPAIGNS

- Incorporate drug driving education into school based road safety initiatives, alongside drink driving education.
- Target education and campaigns at high risk groups such as young males.
- Incorporate the issues relating psychoactive drugs and their effects on driving performance into professional driver education.

REHABILITATION PROGRAMMES

- Integrate rehabilitation schemes in the national countermeasures system.
 - Drug offenders should be treated separately from alcohol offenders.
 - Non-addicts and addicts should be distinguished, as they may require different treatments.
- Assessment and rehabilitation should be regulated and criteria based or common standards should be introduced.
- Driving licence acquisition for known drug users should be regulated – via the European Driving Licence Directive.

RESEARCH

- Research into the effects of common psychoactive drugs on driving behaviour must continue to ensure countermeasures are fit-for-purpose and keep in line with evolving behaviours.
- Research into the effects of new psychoactive substances on driving behaviours is required (e.g. synthetic cannabinoids).

⁸² European Commission 2012, DRUID: Driving Under the Influence of Drugs, Final Report.

- Research into the effectiveness of countermeasures should be carried out.
- Continue to invest in development of drug detection technology, including improved duration times and reliability, lower costs for both roadside screening and post-collision testing and laboratory based confirmatory testing.

DATA COLLECTION

- Encourage greater and improved monitoring of drug use in traffic to gain more insight into its prevalence, development and trends.
- Standardise monitoring methods by establishing a common framework for Member States to use.
- Standardise and maximise post-collision data collection.

BIBLIOGRAPHY

Achermann Stürmer, Y. (2016). Driving under the influence of alcohol and drugs. ESRA thematic report no. 2. ESRA project (European Survey of Road users' safety Attitude). Bern, Switzerland: Swiss Council for Accident Prevention. (https://goo.gl/ OcbGX4)

Elvik, R. (2013), Risk of road accident associated with the use of drugs: A systematic review and meta-analysis of evidence from epidemiological studies, Accident Analysis and Prevention 60, pp.254-267.

EMCDDA (2009), Drugs in Focus: Responding to drug driving in Europe (https://goo.gl/YwGlfN)

EMCDDA (2012), Driving Under the Influence of Drugs, Alcohol and Medicines in Europe: Findings from the DRUID Project. (https://goo.gl/sG9bUw)

EMCDDA (2014), Drug Use, Impaired Driving and Traffic Accidents. (https://goo.gl/0KYqLD)

EMCDDA (2016), European Drug Report: Trends and Developments. (https://goo.gl/Ke77cW)

ESPAD (2015), Results from the European School Survey Project on Alcohol and Other Drugs (https://goo.gl/60yK67)

ETSC (2010), PRAISE Report 3: Fitness to Drive (https://goo.gl/gvYxYH)

ETSC (2013), PIN Flash 25: Risk on the Roads - A Male Problem? (https://goo.gl/tzReO0)

ETSC (2016), Reducing Casualties Involving Young Drivers and Riders in Europe (https://goo.gl/7DtlsU)

European Commission (2012), DRUID: Driving Under the Influence of Drugs, Final Report. (https://goo.gl/Qnm3Gd)

European Commission (2010), DRUID Deliverable 1.1.2a, Metaanalysis of empirical studies concerning the effects of alcohol on safe driving. (https://goo.gl/C1k3gv)

European Commission (2011), DRUID Deliverable 2.2.3: Prevalence of alcohol and other psychoactive substances in drivers in general traffic. Part 1: General results (https://goo.gl/NXzXwq); Part 2: Country reports. (https://goo.gl/8f40Hf)

European Commission (2011), DRUID Deliverable 2.2.5: Prevalence of alcohol and other psychoactive substances in injured and killed drivers. (https://goo.gl/AbfUAw)

European Commission (2008), DRUID Deliverable 4.1.1, Review of existing classification efforts. (https://goo.gl/TFf3OP)

European Commission (2008), DRUID Deliverable 5.5.1: State of the Art on Driver Rehabilitation: Literature Analysis and Provider Survey. (https://goo.gl/g2cEtu)

Fundación de Ayuda contra la Drogadicción (FAD) and FUN-DACIÓN MAPFRE Area of Prevention and Road Safety (2016). Driving and Drugs. Underlying Factors in Risk Behaviour. (https://goo.gl/zhRjtu)

OECD/ITF (2010), Drugs and Driving: Detection and Deterrence, Summary Document. (https://goo.gl/j58LFL)

Norwegian Ministry of Transport and Communications 2015, Driving under the influence of non-alcohol drugs: Legal limits implemented in Norway (https://goo.gl/hxCUWg)

Norwegian Road Traffic Act

Responsible Young Drivers (https://goo.gl/hdEO6a)

Siquilini, R., Colombo, A. Berchialla, P, & Bert, F. (2012). Binge Drinking and Psychoactive Drug Use In A Cohort of European Youths. Journal of Public Health Research, Vol. 1, No. 1.

Swedish Police 2013, Memorandum: "Ethical Council considerations regarding the introduction of screening instruments for drugs in the form of saliva sampling"

SWOV (2015), Factsheet: The use of drugs and medicines behind the wheel (https://goo.gl/p3Gebw)

THINK! Drug Driving (https://goo.gl/0Fia62)

Torfs, K., Meesmann, U., Van den Berghe, W., & Trotta, M. (2016). ESRA 2015 – The results. Synthesis of the main findings from the ESRA survey in 17 countries. ESRA project (European Survey of Road users' safety Attitudes). Brussels, Belgium: Belgian Road Safety Institute

'1200 narkobilister skal på skolebænken', Århus Stiftstidende 26 March 2015 (https://goo.gl/p8f1jd)

UK Department for Transport, Drug Driving, (https://goo.gl/ RhL8s0)

UK Driver and Vehicle Licensing Agency, Assessing Fitness to Drive (https://goo.gl/k0FqUW)

UK Department for Transport 2013, Driving Under the Influence of Drugs: Report from the Expert Panel on Drug Driving, Wolff, K., Brimblecombe, R., Forfar, J.C., Forrest, A.R., Gilvarry, E., Johnston, A., Morgan, J., Osselton, M.D., Read, L., Taylor, D. (https://goo.gl/Udjq4x)

UK Department for Transport, Driving Law, (https://goo.gl/kdulxE)

Wolff K, Agombar R, Clatworthy A, Cowan D, Forrest R, Osselton D, Scott-Ham M and Johnston A. (2017), Expert Panel Review of alternative biological matrices for use as an evidential sample for drug driving. Reference RM4825 SB-2988, Department for Transport, London, UK

World Health Organisation (2016), Drug use and road safety: a policy brief (https://goo.gl/dJZ1fp)

European Transport Safety Council

20 Avenue des Celtes B-1040 Brussels information@etsc.eu Tel: +32 2 230 4106 www.etsc.eu $rac{1}{2}$ @ETSC_EU



