The President's Foundation for the Wellbeing of Society

NATIONAL CENTRE FOR FREEDOM FROM ADDICTIONS

EXPLORING DRUG DRIVING LEGISLATION IN MALTA IN THE CONTEXT OF THE EUROPEAN LANDSCAPE

National Centre for Freedom from Addictions

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The President's Foundation for the Wellbeing of Society
SAN ANTON PALACE
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This report was prepared by the National Centre for Freedom from Addictions, within the President's Foundation for the Wellbeing of Society.

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Foreword from Her Excellency, the President of Malta

The issue of drug use has long caused concern where it impacts negatively on an individual's wellbeing. This has prompted continuous national efforts in terms of policy, legislation, and service provision. The past few years in particular have seen an increase national discourse regarding the use and abuse of drugs, and the ways in which policy and legislation can effectively respond to subsequently arising social and health issues. As a subject which impacts greatly on overall health and wellbeing, this discussion has played an important role within a wider democratic process, and must continuously focus on the promotion of wellbeing for all.

In June 2014, upon launching my Foundation for the Wellbeing of Society, I ensured that one of its five research entities worked to make meaningful contributions for all individuals to be freed from any form of addictive behaviour which might hinder their wellbeing. Recognizing that addictive behaviours have harmful effects which impact not only on the individual person, but also on families and communities, my National Centre for Freedom from Addictions identified the important topic of drug driving, which has thus far made little appearance on the national agenda. They have since worked to extend the discussion of what causes driving impairment beyond alcohol consumption, and have created neutral spaces for professionals working in this field to discuss potentially effective responses for the good and wellbeing of all. Their approach addresses not only the impact on public safety, but also the overall wellbeing of those who find themselves, for whatever reason, impaired and debilitated by the use of both legal and illegal drugs.

In November 2015, I was present at the launch of the Sustainable Development Goals at the United Nationals. The SDGs include a commitment to good health and wellbeing (Goal 3), incorporating targets to strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol, while also pledging to halve the number of global deaths and injuries from road traffic accidents. To reach these goals requires a substantial and collaborative effort, bringing all people together within a shared and respectful space in order to promote good health and safety for every individual in our society. It is only in combining our efforts and working together, both personally and professionally, that real and tangible change can be brought about.

This contribution on drug driving illustrates that everybody has an important role to play in fostering an environment of wellbeing and preserving the health and safety of each and every person. Let us each play our own part.

Her Excellency Marie-Louise Coleiro Preca
President of Malta

A Message from the Director General

The issue of drug driving, up until very recently, has seldom been raised locally in public discussions of wellbeing. This is surprising, considering the wide reach of this issue, and its potential to affect to the lives and wellbeing of many families and communities. There is little public awareness of how the use of drugs may impair an individual's ability to operate vehicles of any kind, endangering themselves, and the lives and wellbeing of those around them. The discussion must go beyond a consideration of drug addiction, although that element is inevitably part of it. Taking prescription drugs, as well as using drugs recreationally, must also enter public debates about road safety, so that any future policy or legislation which seeks to address this gap may do so in full knowledge of the social realities of drug use.

The President's Foundation for the Wellbeing of Society, of which the National Centre for Freedom from Addictions forms part, consistently works to create safe spaces for people to come together and discuss all aspects of wellbeing – specifically what promotes it, and what hinders it. It works to foster an environment of dialogue, participation, and inclusion, so that meaningful conversations can take place for the betterment of society. With these among the Foundation's primary aims, we were happy to support the National Centre for Freedom from Addictions in their innovative venture to place this important topic on the national agenda, instigating important conversations where they might not otherwise have taken place.

This report highlights the urgent need for widespread awareness and further discussion about mixing drugs and alcohol with driving. Road accidents account for more than 25,000 fatalities every year in the EU, and the percentage of these accidents caused by drug driving remaining unknown. It is therefore crucial that stakeholders carry forward the dialogue which has been initiated here. The Foundation reiterates its commitment towards supporting initiatives for people to come together in moments of meaningful dialogue, thereby making tangible contributions towards the wellbeing of each and every person.

Dr Ruth Farrugia
Director General
President's Foundation for the Wellbeing of Society

An Introduction from the Chair

This is the second research study which the National Centre for Freedom from Addictions is launching, as part of the President's Foundation for the Wellbeing of Society. It is with great pleasure and honour that we are launching this report, particularly because we consider this to be an innovative subject, not just locally, but also internationally. Indeed, enforcement of drug-driving laws has only recently started hitting the headlines in other European countries, making this an opportune moment for Malta to start reflecting on its own future in this regard. This 'reflection' is even more pertinent given the changes in legislation pertaining to the possession of illicit substances that took effect in 2014 with the passage of the Drug Dependence (Treatment not Imprisonment) Act. In the aftermath, many seem to have been left wondering whether the changes in sanctioning procedures are being interpreted as increased leniency towards these behaviours. As a National Centre focused specifically on addiction, we welcomed the public debate that the changes in legislation provoked, however, we also sensed a lacuna in this discussion pertaining to the possible impact psychoactive substances could have on the safety of our roads.

In 2014 the possession for personal use of prohibited drugs in certain amounts was no longer punishable by a criminal court but liable, upon conviction by the Commissioner of Justice, to the payment of a fine. Its use, although not legal, is no longer treated as a criminal offence. Does that allow people to drive under its influence? And if not, what is the least/highest amount tolerated? What blood concentration levels of cannabis or its metabolites are compatible with safe driving? Is Maltese legislation clear about driving under the effect of these substances?

Road accidents account for more than 28,000 fatalities every year in the European Union. Drug-driving (together with drunk-driving) has been identified as one of the 'three killers' alongside speeding and non-wearing of seatbelts. Despite the knowledge that drug-driving is becoming increasingly common, data to support evidence-based policy-making remains completely absent in Malta.

Delving deeply into this subject has been fraught with challenges. Professionals from different fields have different ideas and mindsets regarding drug driving, which tend to vary according to background and training. Every profession has its own modus operandi on how to deal with driving under the influence of psychoactive substances, but many have shown their frustration and expressed a need for changes and clarification of existing laws.

Our point of departure was an analysis of measures against drug-driving used in other European countries, asking ourselves: How did other countries tackle this problem? What studies have been conducted on this topic, and in determining safe blood concentration limits for driving? How can Malta learn from other countries that are ahead of us in their research and legislative efforts?

What was immediately evident was that European countries use different approaches to tackle the drug-driving problem, including the type of legislation that is used, to the enforcement measures put in place, and the sanctions imposed on drug drivers. This variation stems from the lack of a harmonised EU approach to tackle drug-driving. We have grouped the main factors relating to national approaches against drug-driving under the following headings, all of which form part of the policy-formulation and policy-implementation process:

1. Scientific evidence (which feeds into the formulation of evidence-based policies);
2. Policies and legislation (which describe the nature of a drug-driving offence and the power of National authorities to implement enforcement measures);
3. Enforcement (which refers to the actions and activities that can be undertaken to ensure that the law is effectively implemented and that drug drivers are detected and brought to justice); and
4. Sanctioning (the process of penalising those who have committed a law infringement).

This report presents the findings from the literature on drug driving in relation to these four categories. A set of recommendations for consideration by Maltese authorities and stakeholders has also been put forward, taking into account the challenges and opportunities that have been highlighted in the literature. Although Malta is still in its infancy when it comes to tackling drug-driving, fortunately, there is much we can learn from the recent experiences of other countries and information that is increasingly being made available.

I cannot end my introduction without thanking all the people who have made this research project possible; the other experts of the National Centre for Freedom from Addictions, our independent researcher Dr Claire Bellia, the Core Team within the President's Foundation for the Wellbeing of Society, Professor Kim Wolff from King's College London who came to Malta to share her experience as Chair of the Drug Driving Commission in the UK, all the professionals interviewed (magistrates, traffic experts and police superintendent), and many others who worked behind the scenes, but without whom, this study would not have been possible. Thank you.

Dr Anna Maria Vella
Chair
National Centre for Freedom from Addictions

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List of Abbreviations

BAC	Blood Alcohol Content
CAST	Campaigns and Awareness-Raising Strategies in Traffic Safety
CBA	Cost-Benefit Analysis
CERTIFIED	Conception and Evaluation of Road-side Testing Instruments to Formalise Impairment Evidence in Drivers
DBS	Dried Blood Spot
DRET	Driver Rehabilitation Evaluation Tool
DRUID	Driving Under the Influence of Drugs, Alcohol and Medicine
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ETSC	European Transport Safety Council
EU	European Union
FIT	Field Impairment Test
GC-MS	Gas Chromatography and Mass Spectrometry
GHB	Gamma-hydroxybutyric acid
ICADTS	International Conference on Alcohol, Drugs, and Traffic Safety
IMMORTAL	Impaired Motorists, Methods of Road-side Testing and Assessment for Licensing
LC-MS	Liquid Chromatography and Mass Spectrometry
LEL	Lower Effect Limit
LOD	Limit of Detection
LOQ	Limit of Quantification
LSD	Lysergic acid diethylamide
MDA	3,4-methylenedioxyamphetamine
MDEA	Methylenedioxyamphetamine
MDMA	3,4-methylenedioxy-methamphetamine
MS	Member State/s
OFDT	Central Observatory on Drugs and Drug Addiction (France)
ROSITA	Road-Side Testing Assessment
RSAP	Road Safety Action Programme
RSPO	Road Safety Policy Orientations 2011-2020
SAM	Stupéfiants et Accidents Mortels (study)
THC	Tetrahydrocannabinol
THC-COOH	11-nor-9-carboxy-delta-9-tetrahydrocannabinol
TISPOL	European Traffic Police Network
UN	United Nations
WHO	World Health Organisation

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Executive Summary

In early 2015, the Maltese Government introduced the Drug Dependence (Treatment not Imprisonment) Act, the purpose of which was to provide a framework to tackle the personal possession of small quantities of prohibited drugs through the administration of fines, treatment, and rehabilitation. The passage of this Act triggered a debate within the National Centre for Freedom for Addictions, a branch of the President's Foundation for the Wellbeing of Society, regarding the possible impact of increased drug-use on behaviours such as driving. It was immediately apparent that the topic of drug-driving was one that deserved particular attention given the risks it poses to both to the drug-user, as well as society as a whole. The relevance of drug-use in the context of driving has also been highlighted at EU-level with drug-driving (together with drunk-driving) considered one of the three main 'killers' in terms of road fatalities.

To provide a timely response to the new Maltese legislation, the Centre embarked on a research project to gain a better understanding of the status of drug-driving policies across the EU, with particular reference to select Member States including Belgium, Norway, the United Kingdom and France. A comparison was then drawn between approaches to counter drug-driving in these countries and the situation on a National level. The analysis was structured in a systematic way, focusing on four main areas of the policy-making and policy-implementation processes: Scientific Evidence; Policies and Legislation; Enforcement; and Sanctioning. A set of ten recommendations, specifically related to these four areas, was developed for consideration by Maltese authorities and stakeholders. These are presented below.

Recommendations related to scientific evidence

Recommendation no. 1 - Malta should implement research studies to understand the prevalence of drug-driving in the local population and its influence on road accidents.

The ability to formulate evidence-based policies tailored to the local context rests on the availability and the quality of scientific data describing the drug-driving problem. Unfortunately, national-level data on deaths resulting from drug- (and drunk-) driving is currently unavailable.

National studies to identify which substances are of greatest concern, how these are being used by drivers, and how they are ultimately affecting road safety on a local level, are urgently needed. Malta could adopt an approach similar to that used in France in the early 2000s and pass legislation to enable the collection of data in the context of a national study on drug-driving. Bringing this to fruition would require significant political will as well as far-reaching stakeholder engagement.

Recommendation no. 2 - Data relevant to drug- (and drunk-) driving should be housed in a dedicated central repository.

A central repository for relevant statistics should be set up before (or in parallel to) any changes in legislation/enforcement measures related to drug-driving are put in place, and a decision would need to be made regarding the appropriate authority or Ministry to house such a database. In France, data was collected by the Central

Observatory on Drugs and Drug Addiction (OFDT) for the purposes of the research study implemented between 2001 and 2003. In Norway, the Norwegian Institute of Public Health receives all blood samples related to drug-driving.

The decision on the appropriate Ministry or entity to house such a repository may need further discussion. However, there will definitely need to be exchange of information between a number of stakeholders, including the National Addictions Advisory Board, the Malta Transport Authority, the National Statistics Office, and the Directorate for Health Information and Research, and the National Focal Point on Drugs and Drug Addiction, to name a few. Issues related to the maintenance and protection of this data would also need to be tackled.

Recommendations related to Policies and Legislation

Recommendation no. 3 – Malta should adopt a two-tier system whereby per se limits for a defined list of 'problem' drugs are available but prosecution on the basis of impairment remains possible.

There are two main legislative options to tackle the drug-driving problem. These are an 'impairment approach' or a 'per se approach'. Implementing and enforcing impairment legislation requires the provision of evidence showing that the driving abilities of the driver were impaired when they were was stopped by traffic police, as well as evidence that a psychoactive substance was present in the driver's body. In the case of per se legislation, an offence is committed if the concentration of a substance in a driver's body has reached or exceeds a legally-prescribed threshold.

In recent years, countries are developing per se legislation to tackle drug-driving by developing legal thresholds for a specific list of illicit (and sometimes, legally-prescribed) drugs. Adopting a per se approach for a group of 'problem drugs' while retaining an impairment approach that serves to counter any form of impairment while driving (a 'two-tier system') has been recommended in EU-level fora. However, the process of deriving legal limits can be a complex affair. Some countries, including Norway and the United Kingdom, have engaged advisory boards or expert panels to help with the establishment of legal thresholds, and have also arranged nation-wide consultation processes. It is also imperative for such thresholds to be acceptable to the general public, as this will contribute to greater compliance with the law.

Recommendation no. 4 – Road safety objectives should not be confused with the general policy concerning drug-use. However, consideration should be given to how other legislation may influence the implementation of 'per se' drug-driving legislation.

Given the relationship between drug possession and drug-driving, consideration needs to be given to how the Drug Dependence Act could affect or influence the implementation of future drug-driving legislation. One possible scenario is that the Act would be perceived by the public as constituting more 'lenient' sanctioning of drug possession, which may, in turn, result in an increased incidence of drug-driving in the general population. This could justify the implementation of more stringent drug-driving legislation that counters the potential negative impact on road safety, and that could also act to deter drug-use in general.

Apart from the impact of general drug laws on road safety, there is also another point that Maltese legislators need to consider. In some countries, including the United Kingdom and Belgium, the results of drug tests taken in the context of proving a drug-driving offence cannot be used as evidence to support other charges related to drug possession. This approach has also been recommended in the literature. Should per se legislation be introduced, Maltese legislators would need to consider whether the recommended separation of the two charges, as has been done in other Member States, would also need to be made in local proceedings.

Recommendation no. 5 - The implementation of any new laws needs to be evaluated, and legislation must be amended/improved when problems are encountered.

Following the early experience with the implementation of legal thresholds to tackle drug-driving in the United Kingdom and France, it is evident that any new law would be met with some resistance and 'teething problems'. The lack of evaluation processes to monitor the impact of drug-driving legislation has been highlighted in the literature, and is one of the main factors hindering progress in this field. Should Malta decide to adopt per se legislation for drug-driving, a system would need to be set up to monitor the implementation of this law and to ensure that it can achieve the goals set by government. Monitoring would include the collection of statistics, as well as a compilation of reports on the progress of implementing any enforcement measures. The network of Ministries/agencies responsible for the evaluation of legal measures would need to be defined. However, this would definitely include the Transport Authority, the Malta Traffic Police, the Department for Health Information and Research and the National Coordinating Unit on Drugs and Alcohol.

Recommendations related to Enforcement Measures

Recommendation no. 6 – Malta should consider the introduction of road-side drug screening using hand-held devices and update drug-testing procedures in the relevant laws and regulations.

The introduction of road-side screening for drugs can significantly improve the enforcement of drug-driving legislation irrespective of whether an impairment approach is retained or 'enhanced' through the introduction of per se limits. Road-side screening can enhance the confidence of traffic police and increase the efficiency of the enforcement and sanctioning processes. Furthermore, the implementation of road-side oral fluid testing for drugs has been found to be cost-beneficial in countries where the existing level of enforcement is low, as is the case in Malta.

A national-level cost-benefit analysis could help inform the formulation of rules governing enforcement approaches. The role of the national toxicology laboratory (which is currently not accredited to perform forensic drug-testing of biological specimens), the availability, specificity, and sensitivity of both hand-held devices as well as laboratory equipment, and the role of medical professionals (specifically-assigned by the police) as part of the drug-testing process would also need to be discussed. In terms of the involvement of medical professionals, separation of the patient care processes and law enforcement procedures should be maintained.

Recommendation no. 7 – Training of all players involved in the detection procedure should be mandatory.

Although detection of impairment through toxicological testing can simplify matters, many countries, including Norway, the United Kingdom, and Belgium, still consider the use of behavioural tests as an integral part of enforcing drug-driving legislation. Training in the recognition of the physical signs of impairment should be instituted and complement any sessions to instruct traffic police in the use of hand-held screening devices.

Training should also extend beyond the police force, and include any other professional that may be involved in determining driving impairment due to drugs, for example, physicians and toxicologists. Such training should be guided by the legislation and any procedures put in place to standardise the detection process from initial screening to confirmatory testing and then reporting (possibly in a court sitting).

Recommendation no. 8 – Malta should explore opportunities to exchange information and learn from the early experiences of new legislative and enforcement measures being implemented in other Member States.

There exist a number of opportunities for Malta to learn and exchange ideas with Member States that have made changes in drug-driving legislation in recent years. Talks at bilateral level, as well as exchanges within dedicated fora (such as those hosted by the European Traffic Police Network, TISPOL), should be pursued.

Recommendations related to Sanctioning

Recommendation no. 9 – Malta needs to explore the best sanctioning options available to deter drug-driving on a local level by involving all stakeholders.

Given the variation in the sanctioning procedures used in other Member States as well as the limited evidence on the effectiveness of these approaches to deter drug-driving, Maltese authorities should consider developing a procedure tailored to the local context. The type of penalties that would need to be imposed, their potential general and special deterrence effects in the case of drug-driving (which may be different from drunk-driving), and how the penalties would be imposed (e.g. through judicial or administrative procedures), are all matters that need to be discussed. The stakeholders that should be involved include the Police, the Justice Ministry, the National Coordinating Unit on Drugs and Alcohol, and the agencies and not-for-profit organisations involved in the provision of services to drug users/abusers. The general public should also be consulted, as the social acceptance of the sanctions being proposed has a huge impact on the compliance of the public with drug-driving laws.

Recommendation no. 10 – Malta should consider the implementation of better procedures targeted at problem drug users and drivers using substitution treatment.

Problem drug users should be targeted with specific and tailored approaches to reduce their risk of engaging in drug-driving behaviour. When drivers who are caught drug-driving are recognised as having problems with addiction, the implementation of any sanction should be coupled with a referral of the driver to a treatment service.

If the sanction involves revocation of the driving licence, earlier re-instatement of the licence can then be considered if the driver shows progress in their treatment. The re-granting procedure should be coupled with a medical assessment that is repeated on a regular basis to ensure compliance with the law.

For those on substitution treatment, individual assessments of fitness to drive should also be implemented and repeated on a regular basis to seek assurances regarding continued abstinence from the concomitant use of other drugs. The risks and benefits of conditional licences versus (full) revocation of driving licences in drivers using opioid detoxification services would have to be weighed up, and further research, even on the local level, may be needed to clarify the mixed and inconclusive findings of the influence of methadone on driving ability in persons on long-term substitution treatment.

A note on Education and Prevention Approaches

One issue that is of great concern is the lack of awareness among the general public of the potential impact of drug-taking on driving ability, and the potential multiplicative effect of mixing different drugs or drugs, and alcohol. Educational approaches that raise awareness about the effects of psychoactive substances on the ability to drive are needed in order to improve this situation. The launch of mass media campaigns is one approach, but, to be effective, these need to be shaped around the audience being targeted and on the issues most pertinent at a local level. Furthermore, educational approaches need to involve young people, as well as families, schools, and health practitioners, in an effort to bring about a change in mentality, as well as a change in behaviour. Propagation of 'anti-drug-driving' messages could also help increase the social disapproval of this specific behaviour. This phenomenon has already been observed for drunk-driving, and has been found to have a significant general deterrent effect on drivers.

In terms of the prevention of drug-driving behaviour, a number of measures have been put in place or recommended to prevent individuals from driving while under the influence of drugs that could also be emulated in the local context. These measures include:

- Increasing the availability and use of public or alternative means of transport, particularly by young people on weekend nights;
- Identification of potential drug-drivers in recreational settings and involvement of the managers and owners of such places in the implementation of prevention campaigns; and
- Including drug awareness training as part of the driving licence course, and the training of driving school operators on drug-driving so that they can propagate prevention messages and sensitise their students.

1. Introduction

Road accidents account for more than 28,000 fatalities every year in the European Union (EU).[1] Drug-driving (together with drunk-driving) has been identified as one of the 'three killers' alongside speeding and seatbelt disuse.[2] Despite the acknowledgment that drug-driving is becoming increasingly common, data collection to support evidence-based policy-making in the EU is haphazard or completely absent[3] – the latter being the case for Malta.[4] Efforts in this area started to gain momentum in the late 1990s and early 2000s[5], however, it is evident that the establishment of comparable and effective responses to mitigate drug-driving across EU Member States remains a work in progress to this very day.

European countries use different approaches to tackle the drug-driving problem, starting from the type of legislation and enforcement measures put in place, to the sanctions imposed on drug-drivers.[6] In this review, we grouped the factors associated with the policy-formulation and policy-implementation process into the following categories:

1. Scientific evidence (which feeds into the formulation of evidence-based policies);
2. Policies and legislation (which describe the nature of a drug-driving offence and the power of national authorities to implement enforcement measures);
3. Enforcement (which refers to the actions and activities that can be undertaken to ensure that the law is effectively implemented and that drug-drivers are detected and brought to justice); and
4. Sanctioning (the process of penalising those who have committed a law infringement).

This publication presents findings from the literature on drug-driving in the EU in relation to these four areas. A set of recommendations for local consideration is also elaborated, taking into account the challenges and opportunities that have been highlighted in the literature. Although Malta is still in its initial stages when it comes to tackling drug-driving, fortunately, there is much it can learn from the experiences and information made available over the past twenty years.

2. Methodology

Information related to each of the four areas listed above was gathered from five main sources:

1. Literature produced by EU research projects dedicated to drug-driving (primarily, the 'DRUID' project);
2. EU-level organisations or structures, including the European Commission and the Council of Ministers of the European Union (Council), as well as the EMCDDA (European Monitoring Centre for Drugs and Drug Addictions), TISPOL (a European Traffic Police Network) and the Pompidou Group (an inter-governmental group fully titled: 'Co-operation Group to Combat Drug Abuse and Illicit Trafficking in Drugs');
3. Information on approaches to combat drug-driving in other countries, primarily France, the United Kingdom, Norway, and Belgium;
4. Maltese legislation and strategy documents; and
5. Information gathered from semi-structured interviews conducted with key stakeholders in Malta in the field of drug-driving legislation and enforcement.

The reasons for focusing on the four countries mentioned in point 3 are the following:

- The passage of a law in France (the 'Gayssot Act') in 1999 mandated the collection of data related to drug-driving for the purposes of a research study.[7] The findings of this study were intended to feed into the formulation of a 'tailored' drug-driving law in France providing a unique example of evidence-based policy-making.
- In the context of drunk-driving, Malta has been influenced by procedures used in the UK and has implemented the same legal blood alcohol content (BAC) threshold in the context of driving. Indeed, the UK (except Scotland) and Malta are the only two countries in Europe with a BAC level of 0.08%.[8] In 2012, the UK Government introduced a new law, making driving under the influence of specific drugs above a specified limit a criminal offence.[9] The consultation process used to adopt these legal limits and enforce them in 2015 provides a useful example which Malta can emulate.
- In 2012, Norway became the first country in the world to introduce legal concentration limits for illicit drugs (as well as medicines) equivalent to BAC levels of 0.02%, 0.05% and 0.12% in the context of driving.[10] This country also implements sanctions on the basis of these limits. With an exemplary track record in road safety, and a pioneer in setting legal and sentencing limits for drugs, Norway's experience presents a model for Malta to consider in this respect.
- Belgium was the first country in Europe to implement an administrative road-side sanction related to licence suspension[11] and to allow saliva analysis results to be introduced as evidence when prosecuting a criminal offence of drug-driving.[12] The advantages and setbacks of the new law provide an insight into the possible implications of any similar laws being introduced in the local setting.

For the purposes of this review, the following definitions have been applied:

Psychoactive/psychotropic substances: These are defined according to the World Health Organisation (WHO) definition of psychoactive substances: "Substances that, when taken in or administered into one's system, affect mental processes, e.g. cognition or affect."[13] The term refers to both licit and illicit substances and incudes illicit drugs, psychoactive medicines, and alcohol.

Drugs: Due to the variable use of this term in the literature, and the tendency to use it in its widest sense, the use of this term in this publication refers to both illicit drugs and psychoactive medicines (which are legally-prescribed).

Illicit drugs: This term refers specifically to those substances for which use and abuse are considered illegal in most countries, for example, use of marijuana, cocaine, heroin, etc. This term does not include legally-prescribed or dispensed psychoactive medicines, even when these may have been illicitly procured.

The main focus of this review is to present the findings of the impact of illicit drug-use on driving. The impact of psychoactive medicines, although equally important, deserves its own analysis given the complexity of this topic. Where possible, results specifically relating to driving under the influence of illicit drugs have been highlighted in the ensuing sections. Nevertheless, there are instances where the distinction between illicit drugs and medicines has not been made in the literature, and the results are presented without a differentiation being made. In such cases, illicit drugs and medicines are generally referred to collectively as 'drugs'.

3. Scientific evidence

3.1 Developments in Drug-Driving Research and Challenges in its Implementation and Interpretation

The lack of scientific evidence related to the prevalence of drug-driving and its impact on road safety was highlighted in the early 2000s. In 2003, the Pompidou Group organised a seminar on 'Road Traffic and Psychoactive Substances', from which it was concluded that until that point, insufficient attention had been paid to this problem.[14] This conclusion was echoed in the Council Resolution of 27th November 2003, on 'Combating the Impact of Psychoactive Substances Use on Road Accidents' (which will be referred to as the '2003 Council Resolution' in this review).[15]

The Resolution acknowledged that data on the presence and incidence of psychoactive substances in road accidents was still highly fragmented across the EU and that research, especially of the epidemiological kind, was needed. The 2003 Council Resolution also argued that scientific evidence had to become the basis for the formulation of future prevention and law enforcement measures. Up until that point, however, scientific data on drug-driving was collected using highly variable approaches, and the lack of standardisation precluded the comparison of research results so as to draw conclusions that could feed into policy formulation.[1]

Another significant development in 2003 was the publication of the EU's 3rd Road Safety Action Programme (RSAP) which set the ambitious target of halving the number of road deaths in the EU by 2010.[16] The RSAP acknowledged that reaching the road safety target meant addressing the issues related to poor driver performance as a result of the use of psychoactive substances (alcohol, illicit drugs, medicines, or combinations of these).[16] It also pointed to the lack of comparable studies on the issue which made it impossible to measure the proportion of fatalities on European roads associated with the use of illicit drugs or psychoactive medicines. This contrasted to the situation with drunk-driving, for which the related proportion of road fatalities in Europe was estimated to be 25%.[1]

Table 1 provides an overview of the challenges related to EU scientific research on drug-driving conducted between the end of the 1990s and 2010.

Lack of prevalence data from different countries	Between 1999 and 2007, approximately 30 studies on drug prevalence in drivers were published, which included data from only 13 of the 27 EU Member States (at the time) and Norway.[3] It is acknowledged that data on drug-driving in Member States (MS) may be derived from various sources, such as the number of detained drivers, cases prosecuted, sentences handed down, etc. In practice, however, most of these statistics relate to an offence of 'impaired driving' without providing more information on the nature of the substance/s being used.[5]
Lack of generalizability	While sample sizes in studies varied between 50 to over 10,000, more than a third reported findings from less than 500 individuals, limiting the ability to draw generalizable conclusions.[3]
Lack of comparability	Studies were carried out in a variety of contexts (e.g. random road-side testing, drivers involved in accidents, driver fatalities) and used different methodologies. For these reasons, results could not be scientifically compared.[1] The variation in methods used was a reflection of the differences in national legislation and policies that dictated which enforcement and detection approaches were permissible in a particular country.[3]
Complexity of the topic	The impact of a drug on driving ability depends on the substance consumed, its potency, and the route of administration.[1] This makes it more difficult to draw overarching conclusions that could be applied in all areas and for call cases of drug-driving.

Table 1 – Challenges related to EU scientific research on drug-driving

Despite the challenges in interpreting scientific evidence on drug-driving, the main conclusion drawn over the years was that drug-driving was not uncommon and could significantly affect traffic safety.[12] In fact, an EU project entitled 'ROSITA II' concluded that about 80% of drug users drive after using drugs, with some even admitting that they have driven while using psychoactive substances.[17]

3.2 A landmark in Drug-Driving Research – the French 'SAM' Study

France has made an exemplary effort in terms of the collection of data to inform the development of drug-driving legislation. In 1999, the passage of French Law no. 99-505 (Section 9) made drug-testing for cannabis, amphetamines, opioids, and cocaine mandatory for all drivers involved in immediately-fatal road accidents.[18] The aim of this law was to generate data to feed into the 'Stupéfiants et Accidents Mortels' (SAM) study.[7] The findings of this study could then be used to formulate appropriate and 'tailored' legislation to tackle the drug-driving problem in France. The approach of the French to delay the passing of drug-driving legislation until more concrete scientific evidence was made available is an interesting example of evidence-based policy-making.

The SAM study was conducted between October 2001 and October 2003, starting two years following the passage of the law.[7] It had two main objectives: the first was to establish the role of drug consumption in road traffic accidents, and the second was to examine the quality of the testing procedures being used in France at the time (i.e. initial screening of a urine sample followed by confirmatory testing using blood and gas chromatography and mass spectrometry (GC-MS)).[19]

The French survey was an important landmark in drug-driving research. It included all drivers involved in traffic incidents where fatalities had occurred (even if the driver was unharmed) thereby increasing the representativeness of the results. The inclusion of approximately 10,000 drivers also gave the study the statistical power earlier studies had lacked.[20] The study also highlighted many of the challenges encountered when carrying out research dedicated to drug-driving, even in a situation where efforts (including legislative) had been made to avoid such stumbling blocks. The main challenges were related to problems with the interpretation of an "immediately fatal" accident; the procedure for urine sampling (this screening step was skipped in some cases); the availability of materials (screening tests, equipment to draw and analyse blood samples, etc.); and the introduction of a new procedure for the transmission of police reports to researchers and the quality of these reports.[19]

3.3 EU Research Projects on Drug-Driving

In order to counter the lack of scientific data on the drug-driving problem, a number of EU research projects were launched in the 2000s. The 'IMMORTAL' project (Impaired Motorists, Methods of Road-side Testing and Assessment for Licensing) included risk assessments related to different forms of driver impairment, and also attempted to identify 'tolerance levels' that could be applied to road-side impairment testing and licensing assessments.[21] Along the same lines, 'CERTIFIED' (Conception and Evaluation of Road-side Testing Instruments to Formalise Impairment Evidence in Drivers) was focused on assessing which drugs carried the highest risk of impairment.[22] The 'ROSITA I' (Road-side Testing Assessment) project was focused on the evaluation of road-side testing devices to detect drug-driving. This was completed in 2005 and followed by a second project, ROSITA II, which was meant to build on the findings of the preceding initiative.[17]

The most recent EU-level effort to advance drug-driving research was launched in 2006 and called 'DRUID' - *Driving Under the Influence of Drugs, Alcohol and Medicine*. This project was aimed at gauging the size of the drug-driving problem and standardising data collection methods for drug-driving research across a number of EU Member States.[23] The latter was influenced by the formulation of international guidelines for drug-driving research, a process that was taking place in parallel to the launch of the DRUID project.[24] The ultimate goal was to deliver a set of recommendations based on sound and comparable scientific evidence.

DRUID brought together 18 countries and 37 partners from across the EU.[25] Due to lack of representation of some EU regions (including Malta), the results of the DRUID project may still not be entirely reflective of the situation on a pan-European level.[23] Nevertheless, the results and recommendations emanating from this project represent an invaluable contribution to drug-driving research.[25] Unfortunately, to our knowledge, there are currently no EU-level research projects aimed at following up this initiative. The work on advancing scientific evidence on drug-driving continues today through the efforts of groups such as the EMCDDA.

The EMCDDA published a literature review in 2014 entitled, 'Drug Use, Impaired Driving and Traffic Safety', which follows two previous versions issued in 1999 and 2008.[1] New results from literature published between 2007 and 2013 were integrated into the previous reports, including the findings of meta-analyses and systematic reviews on the topic. Once again, the main aim was to summarise information on the effects of drug-use on driving and provide an estimate of the scale of the problem in the EU.

3.4 Research Methods used for Drug-Driving

Two main types of studies are used in drug-driving research[1]:

- **Epidemiological studies:** these can include road-side surveys, accident risk analyses, and responsibility studies. The main aim is to determine the prevalence of drug-use among drivers and understand the influence of drugs on road accidents.
- **Experimental studies:** these involve the administration of measured doses of a drug to a volunteer and the observation of the effects on driving in a laboratory, driving simulator, or public road. These studies provide a better understanding of the accident risk and impairment effects of drugs in a controlled setting.

3.4.1 Epidemiological Studies

Epidemiological studies focused on drug-driving fall into two broad categories; **Prevalence Studies,** which estimate the size of the drug-driving problem in the general population or among certain driver-groups, and **Accident-Risk Analyses and Responsibility Studies,** which establish the risk of being involved in, or responsible for, an accident while under the influence of a single or a combination of psychoactive substances.

Although highly informative, epidemiological studies are hampered by the following limitations:

a. Many factors are correlated with both drug-use and with driving impairment and it may not be easy to separate such factors so as to provide an accurate estimation of the impact of drug-use on road safety.[1]
b. They are 'cumbersome' and expensive to conduct since large sample sizes are required in order to draw robust conclusions.[26] This is an even greater problem when it comes to substances with low prevalence rates in the population being studied.
c. Different studies are difficult to compare with each other, due to differences in the profiles of the sample population, the times chosen to conduct the study, the nature of the analysis (e.g. which metabolites are tested for), the delay from consumption prior to testing, the type of biological sample tested, and the analytical cut-offs used.[1] The DRUID project revolutionised the situation for drug-driving research because it ensured that both the data collection processes and toxicological analyses were standardised for studies conducted in European countries participating in the project.[26]
d. When the exposure of the population to a certain drug is quite low, the prevalence rates obtained through epidemiological studies may preclude the estimation of risks from accident risk analyses or responsibility studies. In such cases, experimental studies may be able to provide the needed information.[1]

3.4.1a Prevalence Studies

The prevalence of drug-use among drivers is usually estimated using road-side surveys. Road-side surveys can be implemented on **the general driving population**, in which case testing for drug-related impairment is performed on a random sample of stopped drivers. This type of survey offers the closest representation of drug-driving in the general driving population.[1] However, such surveys are quite expensive to implement and, to ensure representative results, would require stopping a significant number of drivers. The ability to conduct such studies is also dependent on whether legislation exists that empowers police officers to stop drivers at random to conduct impairment or drug screening tests.

To increase the feasibility of road-side surveys, they may be **targeted at subsets of drivers**, for example, injured drivers (admitted to hospital), drivers killed in accidents, drivers involved in traffic accidents (even if not injured), or drivers suspected of drug-driving.[5] In this case, biological sample analyses or field tests to detect drug-related impairment would be performed only in these groups of drivers.

Surveys do not necessarily require road-side testing for drug-related impairment. **Questionnaires** that elicit information on past or current drug-driving behaviours can be filled in face-to-face or through telephone interviews or anonymously. Such surveys, however, are limited by the fact that drivers may be unwilling to admit to drug-driving or simply forget that they have, indeed, engaged in this behaviour in the past.[1]

Results of Prevalence Studies - *General Driving Population*

One of the largest collections of data from road-side surveys of the general driving population was performed as part of the DRUID project between January 2007 and July 2009.[23] Oral fluid and blood were taken from about 50,000 drivers in 13 European countries to provide a picture of the prevalence of drug-driving across Europe. A list of 23 'core substances' was derived for which analysis was mandatory in these 13 countries and analytical cut-offs for oral fluid, serum/plasma and blood were established for this core list.[26] All the partners that took part in the epidemiological studies had to use either liquid or gas chromatography and mass spectrometry (LC-MS/MS or GC-MS) for simultaneous detection of the target substances. Furthermore, the laboratory methods used had to be sensitive enough to reach the cut-offs agreed to as part of the project.

The DRUID project showed the following prevalence rates for different substances or substance combinations in the general driving population; alcohol in 3.48%, (all) illicit drugs in 1.90%, medicines in 1.36%, combinations of illicit drugs or medicines in 0.39%, and alcohol combined with illicit drugs or medicines in 0.37%.[23] It is important to note that the prevalence of illicit drug-use across the 13 countries surveyed was found to be much lower than that of alcohol. Tetrahydrocannabinol (THC) was the most commonly identified illicit substance in drivers (1.32%), followed by cocaine (0.42%), amphetamines (0.08%) and illicit opioids (0.07%).[25] Cannabis, therefore, seems to be an important contributor to the drug-driving problem, overall. Of note, however, was that the prevalence rates in individual countries varied widely. In fact, illicit drug use among drivers (whether alone, in combination with alcohol, or combined with other illicit drugs or medicines) was found to be higher in the

southern EU countries (i.e. Italy, Spain, Portugal), when compared to the Northern countries (which tended to show prevalence rates for illicit drug use among drivers that were below the EU average).[23] The most commonly used drugs in combination were THC and cocaine, together with the medicinal benzodiazepines.[25]

The DRUID project also studied the variation in both the profiles of drivers using illicit drugs and the time period when these would most likely be detected. The project found that illicit drug use and combined use of alcohol and illicit drugs and/or medicines in the general population were most common among young male drivers (i.e. younger than 35 years of age). The main differences were seen for illicit opioids and drug-drug combinations, which were more common in middle-aged men (<50 years).[23] Differences across countries could also be seen when it came to the time of detection and place of detection of drug-drivers.[25]

The EMCDDA literature review identified another nine studies based on road-side surveys, many of which were conducted outside of Europe (only one in Norway).[1] Compared to the results of the DRUID project road-side surveys, the prevalence of drug and alcohol combinations in drivers was between 0.4 and 3.4%, while drug combinations were observed in 0.2 to 2.3% of the general driving population. The most commonly found illicit drugs varied according to the country in which the study was performed, e.g. cannabis in the US, and amphetamines and 3,4-methylenedioxy-methamphetamine (MDMA) in Australia. In those studies conducted on weekend nights, the drug prevalence rates were found to be higher.

Results of Prevalence Studies - ***Injured or Killed Drivers, and Drivers Stopped on the Basis of Suspicion***

With respect to injured or killed drivers, Table 2 summarises findings on prevalence rates for drugs and drug-alcohol or drug-drug combinations. The findings from the DRUID Project and from additional studies reviewed as part of the EMCDDA 2014 literature review are presented side-by-side for comparison.

Scenario	Findings of DRUID Project[25]	Findings of additional studies included in the 2014 EMCDDA Literature Review[1]
Drivers Injured in Traffic Accidents	Overall, 2.3-12.6% of drivers had illicit drugs in their system. After alcohol, cannabis was the most frequently detected illicit drug (0.5-7.6%), followed by amphetamines (0.1-4.2%). Alcohol and drug combinations were found in 2.3-13.2%, while drug combinations were found in 0.5-4.3%. These prevalence rates are higher than the prevalence rates detected for similar categories in the general driving population.	The prevalence of illicit drugs was between 4-12.5% (similar to the results of the DRUID project studies). Cannabis was (again) found to be the most commonly detected drug in 8 of 12 studies. Cocaine was the most frequently detected drug in one of two Italian studies, and also came second among illicit substances in studies conducted in Spain (for males) and the Netherlands.
Drivers Killed in Traffic Accidents	The prevalence of any psychoactive substance ranged between 31-48%. Alcohol was the most commonly implicated substance, while amphetamines were the most common illicit drugs found (0-7.4%), followed by cannabis. It is notable that benzodiazepines were the most frequently detected medicines and often overtook the prevalence of illicit drugs among killed drivers (1.8-13.3%). With respect to combinations: the prevalence of alcohol and drugs (or medicines) was 4.3-7.9% and drug-drug/drug-medicine combinations were found in 0.4-7.3%	Alcohol was, once again, the most frequently detected psychoactive substance (25-40%). Cannabis was the most frequently detected illicit drug in 4 of the studies, with the highest percentage found in the UK (35%). The combination of alcohol and drugs appeared in 3-26% of drivers.

Table 2 – Comparison of findings for injured or killed drivers in the literature

In the case of drivers stopped on the basis of suspicion, a psychoactive substance other than alcohol was also found in more than 80% of samples (higher than for road-side surveys on the general driving population), and, in most cases, this substance was cannabis.[1]

Some conclusions from prevalence studies

The main conclusions that can be drawn from the data presented above are the following:

- Alcohol remains the most prevalent psychoactive substance detected among the general driving population, as well as in seriously injured or killed drivers.
- Since illicit drug use, alone, is not commonly found among seriously injured or killed drivers, the biggest problem is indeed the use of illicit drugs with other substances, particularly alcohol.
- Cannabis seems to be one of the most common illicit drugs used by drivers (whether in the general driving population, in injured or killed drivers or in drivers stopped on the basis of suspicion). However, amphetamines are also frequently implicated in fatal accidents involving drivers under the influence of illicit substances.

3.4.1b Accident Risk Analyses

Case-control studies can be used to estimate the risk of an accident as a result of drug-driving. Such studies would require prevalence data of drug-use in the general driving population to be compared with prevalence data of drug-use among drivers involved in road accidents (whether uninjured, injured, or killed). Although information on the control group is usually derived from road-side survey information (i.e. the group of drivers not involved in traffic accidents and stopped at the road-side), it may also represent a group of patients admitted to hospital for reasons other than their involvement in road accidents.[1]

One of the main problems with case-control studies of this kind is the lack of statistical power due to the low drug prevalence rates among drivers and the small sample size of the study populations. The SAM study, which included over 10,000 drivers involved in immediately-fatal accidents, whether injured, killed or unharmed, was pivotal in this respect.[7]

The DRUID project attempted to determine the relative risk of being seriously injured or killed in an accident while positive for certain illicit substances using case-control studies. Cannabis appeared to 'slightly increase' this risk (1-3 times), benzoylecgonine, cocaine, and illicit opioids were associated with a 'medium increased risk' (2-10 times), amphetamines and use of multiple drugs were associated with a 'highly increased risk' (5-30 times), while alcohol and drug combinations were associated with an 'extremely increased risk'.[23]

When it comes to the odds of serious injury or death of drivers, stimulants, particularly at very high concentrations, can play a very important role in increasing the risk. Indeed, it is important to note that the concentrations of stimulants found in seriously injured or killed drivers tends to be very high when compared to the concentrations used in subjects of experimental studies.[1]

3.4.1c Responsibility Analyses

In this case, the risk of a driver being responsible for an accident while under the influence of drug/s is examined. The 'controls' are drivers involved in accidents, who

are not responsible for its causation, while the 'cases' are drivers who are involved in accidents and who are also responsible for causing it. One of the most important limitations of responsibility analyses is that the judgement of who is responsible for the accident may be incorrect, leading to misclassification bias.[1]

A responsibility study was also carried out under the DRUID umbrella - this estimated the risk of being responsible for a fatal accident while also testing positive for a psychoactive substance. This study, however, was unable to show an increased risk of being responsible for such an accident when under the influence of an individual substance (except for a BAC level equal or greater than 0.12%).[23] On the other hand, the SAM survey concluded that cannabis doubles the risk of being responsible for a fatal traffic crash (whether the driver was killed, injured, or unharmed) and that there is a causal relationship between cannabis and traffic crashes.[7] The findings were particularly worrying for young drivers. Indeed, 17% of under-25 year olds who were involved in fatal traffic crashes were positive for cannabis (THC blood level of >1ng/ml).[20] The SAM study also found that the risk associated with alcohol-cannabis combinations is even greater with a multiplicative effect; however, it failed to show an increased risk due to other illicit drugs.[7]

3.4.2 Experimental Studies

The main advantage of experimental studies is that they allow the assessment of the impact of individual drugs on driving, and are particularly useful for drugs which are not highly prevalent in the driving population.[1] One of the main drawbacks of experimental studies is that very low doses of individual drugs are used, and the impairing effect of higher concentrations may not be elicited.[26] The use of low drug doses is a particular problem when it comes to drawing conclusions on the effect of stimulants on drug-driving given that epidemiological studies have shown that driving impairment tends to occur at very high concentrations.[1] In light of this, recommendations have been made for these studies to be considered alongside epidemiological research in determining legal limits for drug concentrations in drivers.[26]

It is unclear whether the results of experimental studies can be translated into conclusions on driving impairment in the real world. The nature of the study, (i.e. whether carried out in a laboratory setting, a simulator, or during a real-world 'driving test'), makes a difference when interpreting the findings. Experimental studies carried out in a laboratory setting include 'performance tests' that assess the impact of drugs on driving-related skills, such as attention, vigilance, reaction time, etc. These tests, therefore, do not measure the ability to drive as such, but rather the performance of tasks related to driving while under the influence of a psychoactive substance.

There are also 'driving tests' which could either be carried out using simulators or implemented in a real-world setting. There are challenges with both kinds of studies involving actual driving; simulator tests tend to be hampered by a high drop-out rate due to nausea, while real driving tests are challenging because of the need to consider safety for all road users while the test is underway.[1] A recent study provides mixed results regarding the sensitivity of simulator tests compared to on-road testing in terms of the conclusions that can be drawn for THC-related driving impairment.[27] More studies of the kind would be needed in order to ensure the reliability of the results of these driving tests.

Consideration also needs to be given to the following points when it comes to experimental studies[1]:

- the delay between drug consumption and the onset of impairing effects,
- the route of administration (which may play a role in determining the impact on driving),
- the potency of the drugs administered (which may not reflect realistic situations), and
- inter-individual variations in tolerance.

As part of the DRUID project, a meta-analysis of 605 experimental studies of medicine and illicit drug use on driving or driving-related skills was conducted.[23] The meta-analysis showed that oral administration of THC could impair driving ability, however, the experimental studies also suggested that illicit stimulants (e.g. ecstasy, cocaine) do not affect fitness to drive. The only exception is when these stimulants are combined with alcohol or sleep deprivation. In these cases, driving test studies found that use of MDMA in combination with alcohol or sleep deprivation does impair driving performance. It is important to note that one night of sleep deprivation alone causes impairment comparable to that observed under the influence of a BAC level of 0.08% - 0.10%.[28] More research would need to be undertaken to accurately determine the relationship between stimulant-use and driving impairment.

The EMCDDA 2014 review also presented the results of experimental studies of the acute and chronic effects of single drugs on driving performance. With cannabis, for example, the results of experimental studies indicated that there is indeed a detrimental effect on driving ability due to an impairing effect on some cognitive and psychomotor skills (most of which increase in a dose-dependent way). In terms of acute effects, the 'high' from cannabis lasts for only about 2 hours, however, the negative effects on performance may last up to 10 hours after use.[1]

In terms of the acute effects of amphetamines, MDMA and methamphetamines, experimental studies analysed in the EMCDDA review have shown both positive and negative effects on different driving-related skills/functions (mostly improvements in neuropsychological skills and impairment in cognitive functions).[1] As explained above, the findings of these studies are limited since they do not examine the effects of high doses of these substances on driver performance. It is unclear why the results of non-experimental studies that indicate negative effects of stimulants on driving, whether in the acute phase (e.g. due to agitation, confusion, increased risky behaviour, over-estimation of one's own abilities), or after acute intoxication (i.e. as a result of exhaustion and sleepiness) do not seem to be reflected in the findings of experimental studies.[26] The point at which the enhancement of performance due to stimulants starts to overlap with negative effects on performance would need to be found using further experimental studies.

In the case of chronic use, the EMCDDA 2014 literature review concludes that chronic use of *all* illicit drugs, including cannabis and stimulants, is associated with some degree of driving impairment (whether cognitive or psychomotor), and can persist even when the effects of acute intoxication have worn off.[1]

3.4.3 Summary of the Findings of Experimental and Epidemiological Studies

While cannabis has been rather consistently implicated in driving impairment and accident causation (through experimental studies and responsibility studies),

the results for other illicit drugs are unclear.[1] In responsibility studies, the use of amphetamines, cocaine and opiates does not significantly increase the risk of being responsible for a fatal crash.[23] However, in case-control studies there is a relationship between high concentrations of amphetamines and an increased risk of an accident.[25] Stimulants, therefore, seem to increase the risk when in high concentrations, and in the case of a driver being seriously injured or killed. In any case, the results of case-control studies always need cautious interpretation due to the low number of cases and controls usually encountered in the study samples and the low prevalence rates of these drugs in the population under study.[1]

It is evident that the impact of illicit drugs on driving performance may vary depending on the substance used. In addition, the impact of a drug may or may not show a dose-dependent effect and may have a variable influence on driving ability when mixed with alcohol. In all cases, however, the *chronic* use of cocaine, amphetamines, and cannabis, is associated with impairment of skills and cognitive functions, even when acute intoxication has passed.[1]

3.5 Implications for Malta

The Road Safety Strategy 2014-2024 published by the Ministry for Transport and Infrastructure states that 164 fatalities have resulted from road accidents in the last decade and identifies drug-driving as one of the key challenges requiring action.[4] Nevertheless, this same document indicates that, until now, national-level data on deaths resulting from drug- (and drunk-) driving is unavailable. The lack of data on drug-driving cases is not surprising given that the existing legislation is seldom enforced and drivers are rarely prosecuted on the basis of a specific drug-driving offence.[i] The charge that is brought against someone who may have been impaired due to drugs is that of 'negligent driving'.[ii] The lack of information on drug-driving in Malta is also evident from the fact that the country is rarely listed as a contributor of data in pan-European research studies, such as the reports related to the DRUID project.

Although data on illicit drug consumption in the general population does not necessarily equate to illicit drug-use in the context of driving, such statistics could give a 'provisional' indication of which illicit drugs may be encountered in drug-driving cases. The general population survey on drugs, last carried out in 2013 and reported a year later in the National Report to the EMCDDA, provides data on drug-use in the local context[29]:

- In terms of cannabis use, 4.4% of respondents (aged 18 to 65 years) admitted to using cannabis at least once during their lifetime. Among 18-24 year olds, the lifetime prevalence of cannabis is just over 5%.
- With respect to other illicit drugs, 1.4% of the interviewees (aged 18 to 65 years) have used at least one of the following 7 illicit drug-types: ecstasy (MDMA), amphetamines, mephedrone, new psychoactive substances, cocaine, heroin and/or lysergic acid diethylamide (LSD). Ecstasy remains the most popular drug in this group, followed by cocaine.

[i] Information provided by Malta Police Superintendent Mario Tonna during a semi-structured interview held in October, 2015

[ii] Information provided by Magistrate Consuelo Herrera during a semi-structured interview held in September, 2015

This data seems to indicate that the profile of drug-users in Malta is similar to that seen for drug-drivers in other EU Member States, primarily with respect to the use of cannabis.[23] As explained above, cannabis could pose a significant road-safety risk in terms of its higher prevalence in the driving population, however, MDMA consumption may also be hazardous if used in high concentrations. Notwithstanding this information, making assumptions on the profile of drug-drivers simply on the basis of patterns of drug-use is not enough, and more needs to be done on a local level to address the knowledge gap in this field. The following recommendations can be made for Malta to improve its position in terms of scientific evidence on drug-driving.

Recommendation no. 1- Malta should implement research studies to understand the prevalence of drug-driving in the local population and its influence on road accidents

In Malta, the first step in tackling drug-driving could be to conduct national studies to identify which substances are of greatest concern, how these are being used by drivers, and how they are ultimately affecting road safety on a local level. The type of data that would need to be collected includes:

- Prevalence of illicit drug-use in the local driving population, including the general driving population, suspected drivers, and drivers involved in accidents. Such studies can also provide information on the profile of drug-drivers, e.g. gender, age, etc., the most common time and place these are likely to be on the road, and the 'problem substances' that are more commonly implicated.
- Data on common combinations of drugs and drug-alcohol combinations (since such combinations can considerably increase risk).

The EMCDDA has recommended that studies to determine the prevalence of drugs in all drivers should be carried out in all MS, particularly in those drivers that have been involved in a fatal accident.[30] The same advice was given by the European Commission's expert group on drugs, medicines and driving back in 2002.[3] Malta should strongly consider such recommendations in its initial steps to tackle drug-driving, as it could provide a solid foundation for future evidence-based policy-making.

Malta could adopt an approach similar to that used in France in the early 2000s, and pass legislation to enable the collection of data in the context of a national study on drug-driving. However, bringing this to fruition would require significant **political will** and far-reaching **stakeholder engagement.** There are a number of other factors that would also need to be considered if the results of such a study are to be relevant and significant, many of which have already been highlighted in the literature:

- A large study sample and appropriate sampling strategy (as used in the French SAM study) would be a pre-requisite in order to ensure statistical power and representativeness of any data collected;
- Traffic police would have to be conferred with both the authority and the resources to implement the detection measures that a large-scale research study of this type would necessitate;

- Standard operating procedures and protocols for the collection and testing of biological fluids (whether urine, saliva, or blood) would have to be put in place to ensure a consistent approach (in which case, the international recommendations regarding standardisation of procedures found in the 'Guidelines for Drugged-Driving Research' should be adhered to);[24]
- If biological samples are to be collected by medical personnel, institutional cooperation would be needed to ensure that analyses are conducted when and as needed. It is important to point out that, locally, blood testing (including in the context of a road accident) would require the driver's consent or a Magistrate's authorisation as it is considered an 'intimate sample';[31]
- The availability of equipment may also limit the possibility of implementing research efforts on drug-driving. This includes the availability of road-side testing devices (whether using saliva, urine, or other biological fluids) and laboratory equipment for drug-testing (for example, GC-MS or LC-MS/MS);
- Training for all participants in the research study would need to be implemented; and
- Any potential issues related to the protection of sensitive (health-related) data would also need to be addressed, and any decisions on the processing of such data would need to enable research in the public's interest while simultaneously safeguarding the rights of all study subjects.

Recommendation no. 2 - Data relevant to drug- (and drunk-) driving should be housed in a dedicated central repository

As has been mentioned above, many countries currently compile statistics on 'impaired driving' without differentiating between alcohol, illicit drugs, and medicines.[26] The ability to compile statistics, not only about impaired driving events but of actual cases of drug-driving (whether these involve a road accident or not), is also crucial in the longer-term to be able to gauge whether the implementation of any legal/enforcement measures have an impact on the prevalence of drug-driving. Malta needs to ensure that data on drug- (and drunk-) driving becomes available if the country is to meet the reporting requirements expected of EU Member States, for example, those presented in the EU Action Plan on Drugs 2013-2016.[32]

A central repository for relevant statistics should be set up before (or in parallel to) any changes in legislation/enforcement measures related to drug-driving are put in place and a decision would need to be made about where such a repository would be housed. In France, data was collected by the Central Observatory on Drugs and Drug addiction (OFDT) for the purposes of the research study implemented between 2001 and 2003.[19]

The National Road Safety Strategy 2014-2024 identifies the Malta Police as the lead authority for the implementation of specific action on random road-side drug-testing, with support provided by the National Transport Authority.[4] Whether the central repository for collection on information on drug- and drunk-driving events should be housed at the Malta Police or whether it is best for the National Focal Point on Drugs and Drug Addiction (housed within the Ministry for the Family and Social Solidarity) to take charge, may require further discussion. However, there will definitely need to be an exchange of information between a number of stakeholders, including the National Addictions Advisory Board, the Malta Transport Authority, the National Statistics Office, and the Directorate for Health Information and Research, and the National Focal Point on Drugs and Drug Addiction, to name a few. Issues related to the maintenance and protection of this data would also need to be tackled.

4. Policies and Legislation Related to Drug-Driving

4.1 The EU Drug-Driving Policy and Legislative Landscape

There is currently no harmonised EU-level approach to tackle drug-driving.[16] Although a number of EU policy and strategic documents have made reference to the issue, they generally stop short of imposing obligations on national authorities, and guidance is usually presented in the form of non-binding recommendations. From a legal perspective, there are a number of options available to guide EU-level action, including regulations, directives, decisions, recommendations, and opinions. EU Regulations are binding and must be implemented in their entirety in all Member State. The 'next best option' is an EU Directive, in which case Member States are obliged to align themselves to a European goal but are free to implement their own laws in an effort to achieve this. A European Regulation covering drug-driving does not exist. However, EU Directives, Recommendations and Resolutions have been agreed to over the years. Some of the most significant EU-level activities in the context of drug-driving are described below.

4.1.1. EU-Level Directives

The EU Directive on driving licences states that users or abusers of psychoactive substances should be prohibited from driving.[33] Another recently-launched Directive that deals with drug-driving from a 'sanctioning' perspective is the 'Directive on Facilitating the Cross-Border Exchange of Information on Road-Safety-Related Traffic Offences'.[34] This Directive enables the investigation and sanctioning of road-safety-related traffic offences committed with a vehicle which is registered in a Member State, other than the one in which the offence takes place. Designated national contact points are responsible for ensuring the exchange of vehicle registration data across MS. 'Drunk-driving' and 'driving under the influence of drugs' are both listed as offences for which this Directive applies. A definition of drug-driving is also provided; 'driving while impaired by drugs or other substances having a similar effect, as defined in the law of the Member State of offence'.[34] This is a reflection of the retention of a national, as opposed to an EU-level, understanding of the concept of drug-driving.

4.1.2 Resolutions and Recommendations

In 2003, the Council Resolution on 'Combating the impact of psychoactive substance use on road accidents', made it clear that drug-driving should be tackled under any EU activities targeting road accidents.[15] A Commission Communication in the Field of Road Safety was also published the following year.[35] This brought to light the uncertainties with respect to drug-driving (i.e. the lack of limit values and unavailability of effective detection devices) and concluded that, on the subject of drug-driving, more information would be needed before concrete measures to mitigate the problem could be proposed.

4.1.3 EU-Level Policies, Strategies, and Action Plans

In terms of strategic approaches to tackle drug-driving, there are two main types of EU-level documents – those that belong to the 'drugs policy' arena and those belonging to the 'road safety policy' arena. Indeed, drug-driving is an issue that

straddles both areas and it has been noted that measures targeting drug-driving from a road safety perspective should reinforce the overall drug policy objectives and vice versa.[36]

Since the year 2000, the EU has compiled EU Drugs Strategies covering the following time-frames: 2000-2004, 2005-2012 and 2013-2020. These Strategies are complemented by Action Plans, the latest of which is the EU Action Plan on Drugs 2013-2016 (this will be followed by another action plan covering the remaining years until 2020).[32] As mentioned above, these strategies and action plans present the main objectives and priorities related to drug policy in the EU, but they set no legal obligations on MS.[37] Nevertheless, the elaboration of an overarching EU-level strategy and action plan creates a basis for aligning national-level strategies and policies and improves the collective effort towards achieving common objectives. The Action Plan also sets out a number of indicators and identifies EU institutions and stakeholders responsible for monitoring progress towards the achievement of these objectives.

It is worth noting that the EU Drugs Strategy 2013-2020 does not contain a specific reference to drug-driving in the text.[38] Nevertheless, the prevention of drug-use, and of the health and social harms related to it, were linked with the need for measures to mitigate drug-driving in the corresponding Action Plan (2013-2016). It is very encouraging to see that the prevention of drug-driving is listed as one of the foremost actions in this Plan (Action 1(b)).[32] Implementation is expected to require MS-level effort, and the strategy states that monitoring will be undertaken through the provision of data on prevention measures against drug-driving used from various sources such as those implemented on a national level, through reports compiled by the EMCDDA and the Reitox Network.

In terms of European-level road safety documents, the most relevant is the Commission Communication: "Towards a European Road Safety Area: Policy orientations on road safety 2011-2020" (or Road Safety Policy Orientations (RSPO)) which follows three revisions of the Road Safety Action Programme (RSAP).[39] Unfortunately, the issue of drug-driving is not explicitly tackled within this document. An interim evaluation of the RSOP was conducted and a report on the findings was published in 2015.[36] The report identified that the three most common road safety factors that are linked with the risk of death and serious injury are speeding, drunk-/drug-driving and failure to wear a seatbelt. Although drunk-driving is presented as a greater risk factor than drug-driving, the report acknowledged that large differences seem to exist across MS in the prevalence of both behaviours. The report also highlighted that reliable statistics on road accident fatalities resulting from drug-driving are largely missing in the EU. This essentially means that measuring the true extent of the problem remains one of the biggest contemporary challenges.

Documents produced by the European Transport Safety Council (ETSC) outlining their reaction to the RSPO and its interim evaluation provide an external and independent perspective into the potential 'shortcomings' of the EU direction on road safety. In particular, the ETSC expressed its disappointment at the lack of focus on concrete objectives and legislative measures, and has argued that the issue of drug-driving has been omitted as a priority area for road safety in the RSPO.[40] A recent ETSC paper re-confirms that there have been no measures put in place to tackle this issue since 2010, and calls for more emphasis on drunk- and drug-driving

in the upcoming 5-year period.[41] The ETSC recommended three main actions in this paper:

- A proposal for a directive that sets a zero tolerance for all drivers (one might assume that the ETSC is referring to zero tolerance in relation to both drugs and alcohol since these are being referred to as a single priority area);
- Make the use of alcohol interlocks mandatory for repeat offenders and professional drivers; and
- Work on the adoption of a set of common standards for drug-driving enforcement at the road-side.

Another important source of information regarding drug-driving as a road safety issue is the European Traffic Police Network (TISPOL). This is a platform that supports mutual learning and the exchange of best practices among EU traffic police forces. TISPOL published a Strategy entitled 'Vision for Safer Roads'(2011-2015) in which they identify drunk- and drug-driving as one of the 'three killers' in the context of road safety.[2] The Strategy also emphasises the need for continued efforts in road safety enforcement to tackle the increasing incidence of fatalities related to drugs. The final part of the document includes a brief action plan within which TISPOL state that they will develop two important actions specifically addressing drug-driving, specifically:

- Co-ordination of EU-wide enforcement operations related to the three killers, including drunk- and drug-driving;
- Enforcement of measures against drunk- and drug-driving.

4.2 Country-Level Legislative Options to tackle Drug-Driving

As would be expected, the lack of a harmonised EU-approach to tackle drug-driving has created a varied landscape of legislative frameworks across MS. This is in contrast to the legislative landscape related to drunk-driving, from which one can see increasing convergence across European countries and compliance with the legal limits recommended by the European Commission.[42]

Table 3 summarises the main differences in drug-driving legislation across Europe and also presents the main options available to governments in their efforts to respond to this growing phenomenon.

Context in which drug-driving legislation has been formulated	Drug-driving laws passed in the late 1990s and early 2000s came into being for different reasons. For example in France, the result of a National study was the 'stimulus' for the passage of drug-driving legislation[7], whereas in Finland and Sweden, laws were passed as a response to the rise in fatal road accidents related to driving under the influence of drugs and the inadequacy of existing legislation.[5,43]
Definition of a 'drug'	Laws may vary depending on whether they target illicit drugs as well as medicines (e.g. when consumed without a medical prescription). The UK legislation includes legal limits for a specified list of illicit drugs as well as medicines, however, the approach to setting the legal limits is different and drivers can provide evidence of the need to use prescribed medicines.[44] Belgian drug-driving legislation includes a list of up to 7 illicit drugs or their metabolites. Medicines are not explicitly included even if impaired driving as a result of medicine-use can be prosecuted in a court of law.[45,46]
Use of legal limits	This is one of the main differences seen when comparing drug-driving legislation across MS. Some countries use an 'impairment approach' whereas others have implemented per se limits for a specified list of drugs.[47] A two-tiered approach is also sometimes used, whereby both impairment or per se legislation is available for drug-driving. More information on these two approaches is provided below.
Inclusion of drug-driving as a criminal offence in the law	Many countries list drug-driving as a criminal offence, fewer countries list it as a non-criminal offence, and a good number have both criminal and non-criminal offences for drug-driving.[6] A 'non-criminal' offence refers to a situation where no prison or criminal record results from the offence being committed. The transition from a 'non-criminal' to a 'criminal offence' may occur, for example, when the driver is a recidivist or if there is damage to other persons, to property, etc.
Enforcement procedures	Drug-driving laws, or the regulations, decrees, and legal notices that are associated with these, generally identify the enforcement procedure that can be implemented by road traffic police to detect drug-drivers. The law may identify the types of tests that can be implemented to detect drug-related impairment, the nature of any equipment used, the context in which such testing can be performed, the type of biological samples that can be requested of the driver, the involvement of expert witnesses, and the need for driver consent. Member States show variations in the enforcement procedures that are legally permissible.[6,47] More information is provided in the fifth section of this review.
Sanctions	Legislation dictates the punishments and penalties that can be implemented when drug-driving offences are committed. The sanctions defined in law also vary from one Member State to another, with some imposing fines and driving licence suspensions, and others also prescribing conditional or unconditional prison sentences.[6] Sanctions may also target different subsets of drivers, e.g. novice drivers, professional drivers, and problem drug users, depending on the deterrent effect expected.[47] More information on sanctions is provided in the sixth section of this review.

Table 3 - Main differences in drug-driving legislation and related approaches used across Europe

4.2.1 Legislative Approaches to address Drug-Driving

There are two main options available to policy-makers in terms of legislation tackling drug-driving; the '**impairment**' approach or the '**per se**' approach.

Implementing and enforcing **impairment legislation** requires the provision of evidence showing that the driving abilities of the driver were impaired when they were stopped by traffic police, as well as evidence that a psychoactive substance was present in the driver's body at that point in time.[47] To enable smoother and more consistent implementation of impairment approaches, MS have formulated standardised protocols to detect driving impairment at the road-side.[6]

Given the degree of evidence needed when prosecuting offences related to impaired driving, the procedure is costly, complex, and relatively inefficient.[47] The correct implementation of the law is also highly-dependent on the subjective judgement and abilities of the apprehending police officer.[48] Another drawback is that legislation based on an impairment approach provides more opportunity for drivers to make decisions about driving based on a self-assessment of their level of impairment. This may be problematic in high-risk groups, such as problem consumers of drugs or young drivers, whose ability to judge their own ability to drive may be far from reliable.[49]

The main advantage of the impairment approach is that it offers an option when prosecution of drug-driving offences is desirable but justifiable legal thresholds are not available. The impairment approach also tends to show higher levels of social acceptance because it targets the risk posed by *actual* impairment, irrespective of the amount of psychoactive substance/s consumed.[47]

In the case of **per se legislation**, an offence is committed if the concentration of a substance in a driver's body has reached or exceeds a legally-prescribed threshold.[47] Establishing legal limits usually eliminates the requirement for the provision of further evidence of impairment in the context of court proceedings, making prosecution more efficient.

A specific type of per se legislation, referred to as **'zero tolerance' legislation**, generally implies that the legal limit is zero and that any detectable concentration of a substance found in the driver's body would result in a law infringement irrespective of the level of impairment.[48] Despite this definition, many countries do take into consideration the effect of a drug when developing zero tolerance laws and the approach is better defined as *zero tolerance to any degree of impairment* rather than *zero tolerance to any level of a given substance*.[26] In Europe, Germany was the first country to implement zero tolerance laws.[11]

Use of per se laws allows for greater efficiency and certainty of the sanctioning process since law infringements are easier to prove. This is probably the main advantage when compared to impairment laws. Furthermore, these laws have been found

to be quite effective in deterring drunk-driving among young drivers. Since drug-driving also tends to be more prevalent in younger age groups, it can be assumed, therefore, that zero tolerance laws can be very effective at mitigating drug-driving.[47] On the other hand, they may not allow for the severity of sanctioning to adequately match the level of impairment, i.e. punishment severity may relate to the presence or absence of a drug in one's system as opposed to the level of impairment seen in the driver, and consequently, the risk the driver posed to themselves and the public.[50]

A presentation of the legislative approaches used across EU Member States has been provided by the DRUID project.[23] Unfortunately, Malta was not included in this list. These results may need to be updated in view of recent changes in drug-driving laws. Nevertheless, they provide a good illustration of the variability of legislative frameworks used in the context of drug-driving in recent years. The report, published in 2012, shows that 11 countries used the impairment approach, 8 countries used zero tolerance or legal limits, and 9 countries used both approaches in a two-tier system. The trend that appears to be developing is that countries are increasingly shifting towards a two-tier system and including thresholds as part of more-explicit drug-driving legislation.[26]

The DRUID project recommended that the best approach is to derive legal limits for a short list of the most commonly involved drugs (attached to which may be less severe sanctions), combined with an impairment approach that can act as a blanket for all illicit drugs (including newer ones) and also lead to more severe sanctions.[23] TISPOL made a similar recommendation in 2012. The network recommended a zero-tolerance approach targeted at illicit substances mentioned in the United Nations (UN) Convention on narcotic substances of 1961 and the UN Convention on psychotropic substances of 1971, coupled with an impairment approach for those substances which are not mentioned in these international conventions.[12]

Although MS are encouraged to establish per se legislation for a select group of drugs, consideration should always be given to the possible drawbacks or limitations of threshold-based approaches which are presented in Table 4.

Need for scientific evidence	Setting thresholds is a process that requires scientific analysis. Epidemiological and experimental studies need to be available to justify a legal limit and increase its social acceptance.[47] Unfortunately, the limitations in the scientific literature may create challenges when drawing conclusions on legal thresholds. Some countries have called upon the expertise of an advisory group in the development of per se legislation.[26] For certain illicit drugs, including 'legal highs', LSD, and psilocybin, the lack of evidence on the impact of use of such drugs on driving has created difficulties in determining legal thresholds.[51]
Interpretation of results in the context of drug-drug and drug-alcohol combinations	One of the main challenges of drafting per se legislation is the need to take into account the phenomenon of poly-drug use or combined use of alcohol and drugs.[26] Due to the multiplicative effect of certain drug-drug or drug-alcohol combinations, both the establishment of per se thresholds and the interpretation of drug tests, become more complex. The DRUID project has made two recommendations in this respect: 1. The legal BAC limit should be lower in cases where drivers are also found to be under the influence of drugs.[23] 2. If more than one drug is detected, a zero tolerance approach should then be applied.[26]
Variable influence of drugs on driving ability and the influence of drug metabolism	Inter-individual variation (including tolerance) may mean that intoxication and impaired driving ability may or may not be exhibited by drivers in whom a drug concentration exceeds the legal threshold.[26] There is also the possibility of persistence of some drugs or their metabolites long after the intoxicating effects have worn off. In such cases, zero tolerance laws that rely on the detection of small amounts of a substance in the driver's body can result in a disproportionate imposition of sanctions.[47] On the other hand, in the case of drugs that are rapidly metabolised in the body into their metabolites (e.g. marijuana)[20], prosecution on the basis of a legal threshold may create the opportunity to miss traffic offences if drug tests are taken long after a driver is stopped/involved in an accident. In such cases, a negative drug test would not necessarily mean that the driver was not impaired at the point of apprehension. There are also a number of other variables that can influence the relationship between drug concentration and driving performance. These include: the driver's age and driving experience, the time of day, and the complexity of the driving task.[50] Such variables may need to be considered in conjunction with the potential impact of drug consumption on driving ability.
Reduced incentives to prosecute 'higher-level' offences	In the case where a country uses both an impairment approach and a per se approach in a two-tier system, police officers may be more inclined to prosecute on the basis of drug concentrations (i.e. per se legislation) as opposed to impairment.[47] However, if the infringement of per se laws results in less severe punishment for offenders than with infringement of impairment laws then this could effectively result in a more lenient approach towards drug-driving.
Ethical implications of applying legal thresholds	As described above, setting a threshold which is at the 'lower end' of the drug concentration could mean that drivers are prosecuted on the basis of tests without actually exhibiting impaired driving ability. On the other hand, setting thresholds at the 'higher end' of a drug concentration could have a negative impact on road safety because it provides an opportunity for people to drive if they think that they are 'below the limit'.

Need for increased resources (technological, administrative, and enforcement)	The ability to implement per se legislation rests on the availability of detection devices as well as laboratory analytical equipment to be able to ascertain whether thresholds have been reached or exceeded. Implementing per se legislation has also been shown to increase the number of detected drug-driving offences.[20] Countries that are exploring the introduction of per se legislation need to consider whether there are sufficient resources in place to handle this administrative workload. Per se legislation also needs to be accompanied by appropriate levels of enforcement in order to make it effective. Essentially, the lower the limits prescribed in law, the higher the enforcement levels need to be to ensure that the 'general deterrent effect'[iii] is retained.[47] If limits are too low and drivers are not caught, a perception could be created that breaking the law is 'easy' without the risk of apprehension and punishment.

Table 4 – Considerations when designing per se legislation in the context of drug-driving

[iii] The 'general deterrent effect' refers to the influence of a counter-measure to discourage any individual in the general population from committing a crime through the fear of punishment.

The use of different legislative approaches to target particular subsets of drivers has also been discussed in the literature. The DRUID report comparing legislative measures to tackle drunk- and drug-driving noted that legal measures could be more effective when focused on particular target groups, such as first-time offenders and recidivists.[47] In this case, reference is primarily being made to the introduction of sanctions in drug-driving laws to differentially penalise certain groups of drivers. However, there is also the option of targeting driver groups with stricter conditions even with respect to the per se thresholds prescribed in the law. One example could be the formulation of zero tolerance legislation (i.e. low limits) specifically addressing novice drivers, adolescents, and professional drivers, and the use of higher limits for other driver groups. This was the approach proposed in a 2001 Commission Recommendation addressing drunk-driving, and which is also reflected in the drunk-driving legislation of a large number of EU MS today.[42]

4.2.2 A Closer Look at Per Se Legislation

The following section presents some questions that legislators would have to answer in developing per se legislation to combat drug-driving.

4.2.2a Illicit Drugs or Medicines, or Both?

Many countries design per se legislation for a limited number of illicit drugs (usually less than 10 substances), and some also include medicines which may impart an impairing effect on driving ability.[26] Sweden was the first country in Europe to include prescription medicines in its zero tolerance legislation.[52] In the case of medicines, the debate is mainly focused on the fact that certain medicines may actually be required by patients in order to be able to carry out daily activities, including driving. The potential risks related to the use of these medicines and their impact on driving ability, therefore, have to be weighed up against the need for these substances to enable the patient to drive safely. Given the complexity of developing per se legislation for medicines, some countries have decided not to create legal thresholds for medicines (e.g. Belgium).[45] Other countries have included medicines in per se legislation, but have defined higher legal thresholds for these substances instead of using the zero tolerance approach applied to illicit substances (e.g. UK).[44]

4.2.2b Which Illicit Drugs?

The selection of illicit drugs covered by per se legislation may be influenced by the prevalence rates of these drugs in the driving population and in drivers involved in road accidents, or by the level of impairment imparted by certain substances.[26] The differences in the prevalence rankings of certain substances across Member States[5] could be one reason for variations in the choice of drugs included in per se legislation. Despite these variations, however, some substances appear to be more commonly listed in legislation than others, for example, THC and 11-nor-9-carboxy-delta-9-tetrahydrocannabinol (THC-COOH), amphetamine, methamphetamine, MDMA, 3,4-methylenedioxyamphetamine (MDA), methylenedioxyamphetamine (MDEA), cocaine and benzoylecgonine (a metabolite of cocaine), and morphine.[26] The problem with defining legal thresholds for certain illicit drugs results from the lack of scientific evidence related to their impact on driving; indeed, an Expert Panel in the UK has recommended that testing for drugs such as LSD, psilocybin, and 'legal highs' should be instituted even when thresholds are not set, to gather data

on prevalence rates and drug-related impairment. This will ultimately feed into the debate around the establishment of legal thresholds in the future.

4.2.2c Are Illicit Drug Metabolites Considered?

Measurement of a drug metabolite, such as morphine (the active metabolite of heroin) or benzoylecgonine (the inactive metabolite of cocaine), is not always included in legislation but may be needed in cases where the drug is highly unstable and rapidly metabolised in the body.[26] When using metabolites, thresholds would need to take into consideration use of a drug at a more distant point in the driver's past, as could be the case when detecting THC, a metabolite of marijuana.[53] The possibility of including metabolites in the list of substances tested for is also determined by the availability of sampling equipment and storage conditions that can be provided at the local level.[26]

4.2.2d Which Threshold?

In designing per se legislation, there are four possible options when it comes to deciding which drug thresholds should be used[26]:

1. Risk threshold – this denotes a certain risk of an accident or level of impairment when this threshold is reached or exceeded.
2. Lower effect limit (LEL) - the lowest concentration of a substance at which impairment of driving would be seen.
3. Limit of quantification (LOQ) - refers to the smallest measured content from which it is possible to quantify the analyte with an acceptable level of accuracy and precision.
4. Limit of detection (LOD) - refers to the smallest measured content from which it is possible to deduce the presence of the analyte with reasonable statistical certainty.

Both the results of experimental and epidemiological studies need to be used when determining drug thresholds in per se legislation. Where scientific evidence is not enough, pharmacokinetic data should complement the analysis.[26]

Use of LOQs, LODs, and LELs

These limits are used in the context of zero-tolerance legislation and in this case there are two options[26]:

1. a law infringement has occurred when a substance is detected by laboratory equipment (LOD or LOQ), or
2. a law infringement has occurred when the substance exceeds the LEL (lower effect limit) - which could be higher than the limits of detection or quantification of laboratory equipment.

A report produced through the DRUID project has argued that zero-tolerance laws that use the lower effect limit approach would be preferable to those using limits of detection or quantification because the latter would probably result in sanctions being imposed that are disproportionate to the situation at hand.[47] It is primarily for this reason that the use of LODs/LOQs is less likely to gain social acceptance.

The use of LOQs/LODs, however, does have its advantages in situations when it is preferable to detect even small traces of an illicit drug. This may be the case when the effect of a drug could be amplified by the effect of other psychoactive substances (whether drugs or alcohol) or when delays are expected between a traffic stop/accident and sampling.[26] The latter consideration is linked to the rate of drug-metabolism. For those substances that are metabolised very rapidly in the body (e.g. THC), the use of LELs may be misleading if the delay between a stop/accident and blood sampling is expected to be too long. For example, a level of 3ng/ml of THC will go down to 1.43ng/ml of THC after just 1.5 hours. In this case, therefore, it has been recommended to use a lower threshold or back-calculation (the latter being less favourable) to draw conclusions of drug-related impairment at the time of apprehension.[26]

Use of Risk Thresholds

The establishment of risk thresholds has proven to be quite challenging, primarily because these depend on the existence of a *dose-effect relationship* that is often not exhibited by illicit drugs.[26] In 2011, no EU MS was shown to have implemented legislation, including risk thresholds, for substances other than alcohol.[47] Unfortunately, and as explained above, the generation of required scientific data is time-consuming and expensive and may not provide the needed results. Furthermore, the implications of setting risk thresholds, i.e. that drivers would still be 'allowed' to drive while under the influence of certain drug concentrations, increases the complexity of legal, political, law enforcement, and social considerations.

The DRUID project attempted to find the concentration of an illicit substance in the blood that confers the same accident risk as is present with a BAC level of 0.05%. Due to the lack of a sufficient number of drug-impaired drivers in epidemiological studies, however, it was only possible to define and recommend such a threshold for THC.[23]In this case, a blood concentration of 2ng/ml in whole blood (or 3.8ng/ml serum) was found to have the same impairing effect as a BAC of 0.05%. Nevertheless, one must keep in mind the potential difficulties with this recommendation, specifically:

- Although the dose-effect relationship has been repeatedly mentioned as the basis for setting a risk-threshold for cannabis, it is evident that this relationship may not be as straightforward as expected. There are findings that the negative effects of cannabis-use on driving performance may actually be related to subjective feelings of confusion as opposed to the blood-level of THC as such.[26] Cannabis also exhibits a phenomenon called 'counter-clockwise hysteresis' whereby the effects of the drug are seen later than the peak blood concentration.[54] This means that the finding of a concentration of cannabis below the risk threshold would not necessarily imply the absence of impairment.
- Possible delays prior to sampling, during which blood levels of cannabis may fall quite rapidly due to its rapid metabolism in the body.[20]

4.2.2e Traffic Offence vs. Drug Possession Charges?

The establishment of per se legislation enables law enforcement officers to request biological samples in the interest of determining whether a traffic offence has been committed. In some countries, the detection of drugs in a driver's system may lead

to charges of drug possession or consumption, but this is specifically prohibited in other countries (Belgium and UK).[3] The literature points to the need to separate legislation targeting drug policy objectives and legislation focused on road safety policy objectives.[6]

4.3 A focus on other Countries

4.3.1 Norway

In February 2012, Norway became the first country in Europe, and the world, to introduce legal and sentencing limits for non-alcohol psychoactive substances.[10] This created a means of determining levels of impairment following the use of certain drugs that are comparable to the level of impairment due to increasing levels of blood alcohol. Drug limits comparable to a BAC of 0.02% (referred to as 'impairment' limits), and limits comparable to BACs of 0.05% and 0.12% (referred to as 'limits of graded sanctions') have been defined.[26] As the name implies, exceeding drug limits comparable to BACs of 0.05% and 0.12% results in punishments of increasing severity. Norway had sought to create these limits so as to make the judicial system used for driving under the influence of non-alcohol psychoactive substances comparable to that used for drunk-driving.[55]

Prior to the 2012 introduction of these legal limits, Norway used an 'impairment approach' in relation to drug-driving.[55] Impairment would have to be proven in each and every case and required an expert witness statement that took into consideration blood sample results, the results of a clinical examination performed during the blood sampling procedure, and information on the driver's possible tolerance to the drug in question. The expert witness statement would compare the degree of impairment in each case to that expected at different BAC levels, thus creating an opportunity for the judicial system to apply 'equivalent' sanctions for drug-driving as are applied in the case of drunk-driving. This system was considered too costly and time-consuming, and was also thought to be the reason for the more 'lenient' approach being implemented vis-à-vis drug-driving.[50]

The Norwegian Ministry of Transport and Communications elicited the help of an advisory group in order to identify the impairment limits and limits of graded sanctions for a group of non-alcohol psychoactive substances.[56] The advisory group determined impairment limits for 20 substances; THC, amphetamines, cocaine, MDMA, metamphetamine, gamma-hydroxybutyric acid (GHB), LSD, and morphine, ketamine, buprenorphine, methadone, and a group of benzodiazepines. They also determined graded sanction limits for 13 of these 20 substances; THC, GHB, ketamine, and morphine, as well as the benzodiazepines.[55] This was possible primarily due to the documented dose-response relationship for impairment shown by these 13 drugs.

The approach taken by the advisory group was to use epidemiological data as well as data from experimental studies focused on the influence of single doses of the drugs on drug-naïve individuals.[26] Using this approach, the advisory group was unable to determine graded sanction limits for the central stimulants (amphetamine, cocaine, MDMA and methamphetamine). This was due to insufficient or variable evidence on the effect of different concentrations of these drugs on driving ability.[50]

The list of 20 drugs for which impairment limits were identified includes the substances that were most frequently identified in drug-driving cases in Norway between 2008 and 2010 and which were deemed to have *abuse potential* and could pose a risk to road safety.[55] A point of distinction is that, despite the frequent finding of benzoylecgonine in drug-driving cases in Norway, this metabolite was not included in the list of drugs covered by Norwegian per se legislation.[26]

4.3.2 Belgium

In Belgium, drug-driving is a criminal offence for which both impairment and zero tolerance laws exist (Articles 35 and 37bis §1er of the "Loi de la circulation routière").[45] In terms of its zero tolerance approach, limits have been defined for 7 drugs (or their metabolites) when saliva is tested, and 6 drugs (or their metabolites) when plasma is tested.[45] Table 5 lists the thresholds for these drugs as prescribed in Belgian law for testing of saliva and plasma confirmatory testing.

Drug/Metabolite	Saliva Analysis Threshold (ng/ml)	Blood Analysis Threshold (ng/ml in plasma)
THC	10	1
Amphetamines	25	25
MDMA	25	25
Morphine	5	10
6-Acetylmorphine (metabolite of morphine)	5	N/A
Cocaine	10	25
Benzoylecgonine (metabolite of cocaine)	10	25

Table 5 – Saliva and plasma thresholds for drugs and their metabolites according to drug-driving legislation in Belgium

4.3.3 United Kingdom

A specific offence related to drug-driving taking into consideration legal limits was introduced into the UK Crime and Courts Act 2013.[57] This legislation was aimed at facilitating the prosecution of drug-drivers through the establishment of fixed limits for illicit drugs and medicines that would be specified in subsequent regulations. A joint public consultation between the UK and Scottish Governments was launched to understand the preferences for one of three possible approaches[58]:

- Option 1: A zero tolerance approach (or the setting of 'lowest accidental exposure limits') for 8 illicit drugs that impair driving and risk-thresholds for 8 legally-prescribed medicines.
- Option 2: Risk thresholds for 15 substances following the recommendations made by an expert panel (this list included both illicit drugs and prescribed medicines).
- Option 3: A zero tolerance approach for 16 substances (both illicit drugs and prescribed medicines).

The consultation on the choice of specific drugs to be included in the new regulations and their relevant limits, involved 94 organisations.[58] These included public, private, as well as voluntary organisations, academics and experts in the field, police, and driving instructors. The work done by these organisations required the analysis

of the three options noted above. An impact assessment was also performed to complement the results of the consultation exercise.[59]

In the end, the first option was chosen, primarily in view of the 'confusing message' that legal limits for illicit drugs could send out in the case of option two, and the potential negative implications for drivers using prescribed medication that would result from implementing option three.[60] Ultimately, the implementation of per se legislation in the context of drug-driving began in the UK in 2015 following the introduction of legal limit regulations specifying zero tolerance for 8 illicit drugs and risk thresholds for 9 medicines (amphetamines were included at a later stage).[44] In addition to per se legislation, the UK will continue imposing impairment legislation in parallel, making it a two-tier system.

The implementation of 'lowest accidental exposure limits' for 8 illegal drugs (option 1) is an example of how the use of the term 'zero tolerance' does not always necessarily refer to the prohibition of any level of a given substance in one's body. The UK limits are set in such a way so as to rule out accidental exposure to the 8 listed illicit drugs.[60] Drivers, therefore, may have very small quantities of these drugs in their system without this constituting an offence. As an example, the 'zero tolerance' blood limit set for THC in the UK is 2µg/L.[44] However, this limit is higher than the Norwegian THC threshold of 1.3µg/L in blood, which is comparable to a BAC level of 0.02%.[26]

4.4 Implications for Malta

According to the Malta Traffic Regulation Ordinance (Cap. 65 of the Laws of Malta), impaired driving due to alcohol or drugs is prohibited in Malta and is considered a criminal offence.[61] Although per se limits have been defined for alcohol in blood, breath, and urine, there are no limits set for any drugs. This effectively means that Malta has an impairment approach in place to prosecute drug-drivers, which is rarely used given the complexity of the enforcement procedure that is required.[IV]

In terms of drug-related policy, the Dangerous Drugs Ordinance (Cap. 101 of the Laws of Malta), which concerns narcotic drugs, and the Medical and Kindred Professions Ordinance (Cap. 31 of the Laws of Malta), which focuses on psychotropic drugs, constitute the principal framework of Maltese legislation relating to drug use and abuse.[62,63] These Ordinances are linked with a number of other rules and regulations addressing various aspects related to drug use and abuse more generally.

The following recommendations for Maltese legislation can be made on the basis of this review:

[IV] Information provided by Malta Police Superintendent Mario Tonna during a semi-structured interview held in October, 2015

Recommendation no.3 – Malta should adopt a two-tier system whereby per se limits for a defined list of 'problem' drugs are available but prosecution on the basis of impairment remains possible.

This is in-keeping with the conclusions of the DRUID project as well as the guidance provided by TISPOL.[12,26] It is important to note, however, that implementing this recommendation requires consideration of a number of factors presented below:

- Definition of a drug and inclusion of illicit drugs and/or medicines in per se legislation:

The Traffic Regulation Ordinance defines a drug as 'any intoxicant other than alcohol'.[61] There is no reference to the lists of narcotic and psychotropic drugs covered by the Dangerous Drugs Ordinance and the Medical and Kindred Professions Ordinance. Furthermore, this definition does not distinguish between prescribed medications that could also result in driving impairment. The first step that would need to be taken would be to determine which drugs (or their metabolites) would be covered by any threshold-based legislation, and whether this list would also include psychoactive medicines. Other countries have set up **advisory groups** to assist with this process and these have made use of data on prevalence and accident risk associated with drug-use among drivers in order to 'select' drugs for inclusion in per se legislation. **Stakeholder consultations, and, impact assessments**, as in the case of the UK, may also need to be carried out in order to inform this selection process.

Should Malta consider going down the same road, a necessary pre-condition would be the implementation of epidemiological studies on a local level to identify the 'problem' drugs. This information could then be used as a basis for decision-making by a dedicated expert panel or advisory group. Another option would be to emulate drug lists used in other countries, such as the UK. This approach is not ideal, however, since it is not tailored to the local drug-driving context.

- Use of zero tolerance versus risk thresholds

If zero tolerance is used, the recommended approach is to use the lower effect limit of drugs, denoting the point at which an impairment of driving abilities is likely to 'begin'. As mentioned above, use of zero-tolerance laws could be particularly effective in curbing drug-driving as such laws tend to have a significant impact on young drivers - the commonest drug-driving offenders in most countries.[47] The TISPOL policy paper also recommends a zero tolerance approach to drug-driving.[12]

Use of risk-thresholds can be more challenging if sufficient scientific data is unavailable and if it results in legal limits that are perceived to be 'too high' to be exceeded. Malta has one of the highest legal blood-alcohol limits in the EU, at 0.08%. Clearly, this threshold has not resulted in a general deterrent effect when it comes to drunk-driving, a situation which is amplified by the lack of appropriate enforcement measures. Malta would need to consider whether its approach to drug-driving will be guided by its approach to drunk-driving (for example, impairment due to drugs is considered equivalent to impairment at a BAC level of 0.08%), or whether the approach for both drunk- and drug-driving needs to be revised so as to create stricter conditions for all drivers.

Another point Maltese legislators would need to consider is whether thresholds should vary in cases of drug-drug and drug-alcohol combinations, or in cases involving certain subsets of drivers. Some options highlighted above include:

1. Drug-alcohol combinations: A lower legal limit is set for alcohol when this is detected in the presence of drugs.
2. Drug-drug combinations: Zero-tolerance is applied when just one drug is found to exceed a legal threshold but is combined with the presence of other drugs.
3. Novice drivers, young drivers, professional drivers: These should be specifically targeted with zero-tolerance legislation in the context of drug-driving.

Whatever decision is taken regarding the 'types' of thresholds and the context in which these are applied, one point that may be worth considering is whether these limits should be specified in law, or whether the law should make reference to other legal documents, such as regulations or notices, where these limits are specified. This could facilitate the process should future amendments to the list of drugs covered by per se legislation or the legal limits for these drugs be expected.

- Availability of resources to enforce per se legislation

The literature has shown that a law is only effective as long as it can be enforced in a swift and effective manner.[47] Malta currently struggles to enforce drunk-driving per se legislation due to the lack of usable road-side devices.[v] It signals the possible stumbling blocks that may be encountered should per se legislation for drugs be implemented. Any new law should confer the police with the authority to perform drug-testing (at least at the road-side) and there needs to be enough personnel and equipment available to be able to set up and process the results of road checks specifically targeting drug-driving offences.

Should per se legislation against drug-driving be adequately enforced, an increase in the administrative workload of the judicial services would be expected. Once again, putting legislation in place would have to ensure that such considerations are taken into account, possibly through the implementation of an impact assessment exploring various possible scenarios.

Recommendation no.4 – Road safety objectives should not be confused with the general policy concerning drug use, however, consideration should be given to how other legislation may influence the implementation of per se drug-driving legislation.

Although there is no per se approach covering the illegal use of psychotropic and narcotic drugs in Maltese law, a conviction of possession or trafficking may be brought against an individual if use can be proven in court.[64] The recent launch of the Drug Dependence (Treatment Not Imprisonment) Act, however, means that simple possession (or drug possession for personal use) is now punishable through fines as well as treatment/rehabilitation approaches.[65] Given the relationship

[v] Information provided by Malta Police Superintendent Mario Tonna during a semi-structured interview held in October, 2015

between drug possession and drug-driving, **consideration needs to be given to how the Drug Dependence Act could affect or influence the implementation of future drug-driving legislation.** One possible scenario is that the public's perception of more 'lenient' sanctioning of drug-possession may result in an increased incidence of drug-driving in the general population. This could justify the implementation of more stringent drug-driving legislation that counters the potential negative impact on road safety, and that could also act to deter drug-use in general.

The drawback of this approach is that the use of less severe penalties for drug possession and strict laws for drug-driving may be perceived as contradictory by the general public. The government could counter this by arguing that, under no circumstance is personal drug use allowed to present a risk to, or outweigh concerns for the safety of, other road users.

Apart from the impact of general drug laws on road safety, there is also another point that Maltese legislators need to consider when it comes to charging drug-drivers with an offence. **In most countries, results of drug tests taken in the context of proving a drug-driving offence cannot be used as evidence to prove other charges related to drug possession** (e.g.UK, Belgium).[45, 57] This approach has also been recommended in the literature.[47] In Malta, the set-up of the judicial system makes it possible to bring all possible charges against an individual together in one arraignment before the Court of Law. It is expected, therefore, that a drug-driving charge proven through the presentation of an analysis of biological fluids could also result in a charge of drug possession for the same individual. Should per se legislation be introduced, Maltese legislators would need to consider whether the recommended separation of the two charges would need to be made.

Recommendation no. 5 - The implementation of any new laws needs to be evaluated, and legislation must be amended/improved when problems are encountered.

The paucity of scientific evidence related to the evaluation of the effectiveness of legal approaches against drug-driving has been noted in the literature.[11],[66] While some assumptions can be made, it is difficult to know which legislative framework works best. It is also difficult to expect that the results seen in one country can be transposed to another country given the specificities of each context, including the particular attitudes and behaviours seen in different populations.

As was the case with the introduction of the French Law in 1999, challenges are bound to be encountered when legislation is first implemented.[19] Should Malta decide to adopt per se legislation for drug-driving, a system would need to be set up to monitor the implementation of this law and to ensure that it can achieve the goals set by government. Monitoring would include the collection of statistics (e.g. apprehended drivers, road fatalities due to drug-driving, etc.), as well as a compilation of reports on the progress of implementing any enforcement measures. The network of Ministries/agencies responsible for the evaluation of legal measures would need to be defined. This would definitely include the Transport Authority, the Malta Traffic Police, the Department for Health Information and Research, and the National Coordinating Unit on Drugs and Alcohol.

5. Enforcement

This section is linked, to a large extent, to the previous section on legislation, as the power of police officers to enforce drug-driving laws largely depends on the authority conferred to them through legislation to implement detection procedures.

Information is not always readily available regarding enforcement measures against drug-driving used in different EU MS, however, it seems that a number of different approaches exist.[6] This is a reflection of the variation in legislative approaches used in different countries, and the complexity of the enforcement process itself, which involves the following three steps:

1. First stage of contact (usually between the police officer and a driver);
2. Rules of procedure to establish whether drug-use has taken place and its impact on driving ability. For the purposes of this review, we shall refer to these as 'detection procedures'; and
3. Training of all parties involved in the detection process.

5.1 First Stage of Contact

There are three possible scenarios during which first contact can be made between police officers and a driver for the purposes of assessing impairment due to drugs:

- During a random traffic stop
- When a suspicion of impaired driving exists
- In the context of a fatal accident or an accident causing injury

In all cases, the role of the police officer is to ascertain whether a driver may be impaired due to drugs, using behavioural and/or toxicological tests. In 2002, the EU Commission's Expert Group on drugs, medicines, and driving recommended that EU Member States should allow random road-side testing for drugs. They also recommended that drug and alcohol testing should be obligatory in cases where accidents have resulted in death or severe injury.[5]

Despite these recommendations, the use of mandatory versus random drug-testing of drivers varies across MS. According to a paper presented at the 2007 International Conference on Alcohol, Drugs, and Traffic Safety (the ICADTS Conference), rapid road-side drug tests (using saliva or sweat tests) were only legally permitted in 9 countries (including Czech republic, Italy, Lithuania, Latvia, Austria, Portugal, Poland, Slovenia, and UK).[6] Limitations in available road-side testing devices, however, meant that such testing was not actually being performed. Mandatory testing for drugs is usually required in cases of fatal accidents (Poland, Finland), or when accidents cause injury (Denmark, Portugal, Norway).[5] However, even the existence of such legal obligations to test drivers in certain situations does not necessarily translate into concrete action. The main problem is that prosecution can normally proceed on the basis of evidence of excessive alcohol levels, making the more complex (and more costly) process of drug-testing redundant, as has been shown to be the case for Denmark, Estonia, Ireland and Portugal.[3]

With respect to the relationship between the enforcement process and the legislative approach used for drug-driving, the literature has shown that the use of random drug testing is particularly important in the context of implementing zero

tolerance laws.[47] Testing drivers indiscriminately is the level of enforcement that is most likely to match the objectives of this type of law. In keeping with this, TISPOL has recommended that all EU MS should implement random drug testing and a zero tolerance approach.[12]

Random drug-testing generally takes place in the context of road traffic controls or checkpoints, the effectiveness of which is determined by a number of factors, including the frequency of the controls, their location, and the time of day they are conducted.[47] The choice of where and when such controls take place may also be determined by the profile of the 'typical' drug-driver in a particular country, or the driver group being targeted. The DRUID project has recommended that the main 'target groups', or rather the groups presenting the highest risk of driving while impaired by illicit substances, include: young males, drivers combining drugs and alcohol or several drugs, and drug consumers (of stimulants) that are also sleep deprived.[23]

5.2 Detection Procedures

If drug-driving legislation is passed, a procedure should also be put in place to enable its enforcement. This procedure determines how drug-drivers can be detected and may be written into law, be part of a specific set of regulations, or be presented in the form of guidelines. Wherever the procedure is outlined, it should cover two main aspects:

- The **tests** that can be implemented to ascertain whether impairment due to drugs is present. A number of points need to be considered including the nature of the test itself (whether behavioural or toxicological), the hierarchy of tests, the devices used, and the biological samples that may be needed.
- The **logistical and procedural matters**, primarily, where tests should be carried out, the persons involved in the detection procedure, and their respective roles (e.g. medical personnel, police officers, etc.).

5.2.1 Behavioural Tests

The 2003 Council Resolution stressed the need for increased traffic controls and for more tests (both behavioural and toxicological) to be undertaken to be able to detect drug-use in drivers.[15] In some countries where per se limits for drugs have not been defined, the prosecution of drug-driving requires the presentation of evidence of impairment.[47] Although drug tests may be used to give weight to charges brought against a driver, evidence of impairment usually takes the form of results of behavioural tests conducted by specifically-trained police officers or a medical professional. In order to ensure standardisation of this process, some countries have developed specific protocols for behavioural testing to detect impairment, e.g. the 5-step Field Impairment Test (FIT) in the UK.[67] These protocols may include specific forms that would need to be filled in and presented in court should the need arise.[6]

The identification of impairment may be achieved in a number of ways, e.g. coordination tests, reactions, manner of speaking, etc.[5] The implementation of these tests requires skilled and trained officers, and the process itself is time-consuming. Unfortunately, the DRUID project found that the use of a checklist of clinical signs of impairment (the so-called 'Clinical Signs Inventory') did not provide promising

results.[23] In this study, 24 different clinical signs/symptoms of impairment were tested for (e.g. bloodshot eyes, uncoordinated movements, aggressive behaviour) prior to using oral fluid drug screening devices. The checklist was useful primarily in the context of high drug concentrations or very recent drug use. Similarly, a 2013 evaluation of the use of FIT in the context of drug-driving did not yield positive results, probably because this type of testing was developed with the scope of detecting alcohol as opposed to drug-related impairment.[6]

The main advantage of behavioural tests is that their sole purpose is to evaluate the level of impaired performance irrespective of the concentration of drugs consumed. This is particularly important in cases of multi-drug use or with the combination of drugs and alcohol, in which case the results of drug tests may not adequately reflect the actual impact on the individual's driving ability.

5.2.2 Toxicological Tests

Compared to behavioural tests, toxicological tests are a rapid and objective means of detecting drug-use by drivers. The availability of such tests is also the basis for enforcing per se legislation. There are two main types of toxicological tests; 'initial tests' (for example, those conducted at the road-side to screen drivers for drug-related impairment), and 'confirmatory tests' (usually performed using blood or plasma and involving the use of GC-MS or LC-MS/MS).[68] Per se laws generally include drug thresholds for both initial and confirmatory tests, but only the results of the latter are usually allowed into evidence in court proceedings.[5] One of the main stumbling blocks in enforcing per se legislation has been the lack of road-side devices that can be used to implement initial drug testing for drivers.[22]

Related to the topic of toxicological testing is the nature of the biological samples that may be required for initial and confirmatory testing. These can include blood, plasma/serum, urine, saliva (oral fluid), and sweat. Confirmatory testing usually requires a sample of blood (or plasma), while initial testing may be performed on urine, saliva, or sweat.

5.2.2a Road-side Drug-Testing Devices

Although per se legislation has made road-side testing for drugs permissible in many countries, this has remained only a theoretical possibility in most cases due to the limitations of the available devices.[5] In 2003, the Council Resolution called for research that would lead to improvements in the practicality and reliability of road-side tests that could ultimately enable standardisation of their use.[15] Nevertheless, finding suitable devices that can provide reliable results in a reasonable time-frame has proven to be a challenge.

The early 2000s saw the launch of 2 EU research projects dedicated to road-side drug testing devices; CERTIFIED and ROSITA I. Prior to the ROSITA I project, very few studies had sought to evaluate road-side drug tests. The implementation of this project was the first experience using such tests for police officers in participating countries.[22] ROSITA I was aimed at examining the use of different types of road-side tests (e.g. urine, oral fluid and/or blood) in 8 countries.[69] The challenges with using urine samples were highlighted, including the need for a sanitary van and delays when taking a driver to a suitable facility when a van was not available. A majority of countries were reported to prefer oral fluid sampling in the context of road-side testing.[22]

One of the main challenges with the collection of urine, apart from the need to provide privacy during the collection process, is that the interpretation of the findings of a urine test may not be reflective of the level of drug-related impairment at a particular point in time. This is one of the main problems with urine tests for cannabis or its metabolites.[20] Detection of cannabinoids in a driver's system may include detection of THC and/or THC-COOH. THC is the main psychoactive agent, the levels of which diminish rapidly in blood.[54] In order to detect it, therefore, immediate testing of a driver may be required. Even with very low levels of THC in the blood, however, harmful effects may persist.[26] The use of saliva to test for THC offers an option for road-side tests and is particularly useful given the strong THC saliva/blood relationship.[20] The non-psychoactive metabolite, THC-COOH, can be detected in blood as well as urine. However, the long half-life of THC-COOH in both blood and urine means that it is an inadequate marker of the level of impairment and the timing of consumption.[54]

In conclusion, therefore, detecting THC in blood infers recent consumption of cannabis and potential impairment of driving abilities, while detection of THC-COOH in blood or urine could indicate past consumption and does not necessarily imply impairment of driving abilities at that particular moment in time. However, if THC (in blood) and THC-COOH (in urine) are measured simultaneously, the use of pharmacokinetics could help determine status of intoxication at a certain time point.[20]

Both the ROSITA I and its follow-up, the ROSITA II project, were unable to identify a road-side device that could meet the established acceptability criteria in the context of drug-driving.[17,69] Nevertheless, the use of road-side testing was associated with a number of advantages[22]:

- It increases the confidence of police officers to prosecute drug-driving cases.
- The tests save time and money – subjects do not necessarily need transportation to a police facility for testing, and the confirmatory tests are only performed on those for whom initial screening is positive.
- The increased publicity generated by use of the tests increases the general prevention effect.

Over the years, the complexity of acquiring urine tests at the road-side and the preference for oral fluid testing led researchers to shift their focus to the evaluation of devices using saliva. Oral fluid has also been identified as a better medium for determining recent drug use.[23,70] However, the oral fluid devices tested as part of the ROSITA II project were not satisfactory in terms of ease of use, duration, sample volume needed, sensitivity, and reliability.[17] The DRUID project also attempted to evaluate 8 road-side oral fluid screening devices. The screening devices were evaluated on the basis of their practicality as well as their analytical ability. The drugs tested for included amphetamine(s), methamphetamine, MDMA, cannabis, cocaine, illicit opioids (and benzodiazepines).[68]

Similar to the ROSITA II project, DRUID did not give many promising results with respect to the road-side use of oral fluid tests. None of the devices showed 80% sensitivity, specificity, and accuracy for each of the substances tested for. Furthermore, the devices showed a relatively low sensitivity for cannabis, the most common illicit drug in most countries.[23] An overall evaluation was also undertaken to understand the usefulness of oral fluid road-side testing, more generally, as a screening procedure.

In this case a valid result was taken to be a positive drug screening result that was followed by the detection of any of the drugs listed above in a confirmatory test. In this overall evaluation, 3 of the devices showed more than 80% sensitivity, specificity and accuracy.[68] The DRUID project also mentioned that, in determining the suitability of a road-testing device on a country-level, the prevalence rates of different drugs in the driving population need to be taken into consideration as these are associated with the sensitivity and specificity levels of different devices.[23]

As of 2011, no road-side drug-testing devices had been identified that could provide results for presentation as evidence in court.[47] Indeed, in most countries, confirmatory analysis of a blood (or serum) sample was usually required as evidence in court proceedings (Norway, Finland, Denmark and Sweden).[12] The situation changed when Belgium introduced evidentiary saliva analysis into their per se law in 2009.[70] TISPOL has also recommended that oral fluid analysis should be admissible as evidence, and that drivers should be required to provide such samples when requested by the police.[12] In the same policy paper, TISPOL also provided a list of attributes that road-side drug-testing devices should exhibit. These devices should be:

- efficient, straightforward and easy to use
- reliable (electronic devices may require periodic re-calibration)
- easily available/accessible by law enforcement officers
- inexpensive

A possible innovation may be the introduction of dried blood spot (DBS) analysis. This is a less invasive test that could be used a means to confirm illicit drug use following initial screening.[23] DBS offers many advantages over blood or plasma sampling, in terms of transport, storage, stability, the risk of infections and the need for medical personnel at sampling stage.[26] The results of the DRUID project on the use of DBS analysis in drug-driving cases were promising and showed that, for the substances investigated in the DRUID project (i.e. MDMA, MDA, Morphine, but not the other illicit drugs generally mentioned, e.g. THC and cocaine), the results of DBS and blood analyses could be regarded as equivalent.[23] The use of DBS analysis, therefore, could hold promise when investigating drug-driving cases in the future.

5.2.3 Logistics and Procedural Matters

In implementing enforcement measures, there are a number of logistical and procedural matters that need to be clear for all those involved in the drug-testing process. The main difficulties to surpass, in terms of logistics, relate to the location of behavioural tests and any sampling of biological fluids. Also the transfer of biological samples from one point to another may prove problematic.

Initial behavioural testing or biological fluid testing for drugs may or may not be carried out at the road-side. In the case of initial drug testing, the location depends to a large extent on the nature of the sample being collected and the availability of hand-held road-side testing devices. If a urine sample is required, a road-side check needs to ensure that there are adequate facilities for a driver to provide the sample (e.g. through the availability of a sanitary van). In most cases, urine as well as blood samples are taken at a police station or health facility. The direction for such tests to be taken may be provided by the apprehending police officer or by a medical practitioner following a medical examination of the driver.[6] Any biological samples collected for confirmatory analysis need to be transferred to a laboratory that would

be designated by the government as having the authority to perform such tests. The viability of the sample and chain of custody procedures need to be factored in at this stage.

The involvement of medical professionals and toxicologists in the enforcement procedure is also a key component. As mentioned above, medical practitioners may be brought in to assess the level of impairment of a driver and be called in as expert witnesses in any subsequent court proceedings.[70] In some cases, the toxicologist is asked to sign a statement in relation to a confirmatory drug test and its interpretation.[5]

5.3 Training

Given the inadequacy of road-side drug tests,[23] behavioural testing continues to be an important screening step for impairment in the enforcement of drug-driving legislation.[71] In 2002, the Commission's Expert Group on drugs recommended mandatory training for police officers in the identification of drug-related impairment.[5] The Council Resolution of 2003 also called for EU-level guidelines to be drawn up that would recommend training programmes for police officers and health professionals.[15] Despite these initiatives, training for police officers is still implemented in a haphazard way across the EU, with some countries offering general basic training to all police officers (Spain, Cyprus, Hungary, Netherlands), and others providing supplementary training specifically to traffic police (Latvia, Luxembourg, Austria, Poland, Slovakia, Norway).[6] Until 2007, only four countries were found to implement obligatory training for officers permitted to carry out behavioural testing of drivers (Belgium, Portugal, Sweden, UK).[30] The reasons for this lack of training at country-level include the absence of legal provisions to implement drug impairment testing procedures, and difficulties in establishing which behavioural tests could be acceptable to both police officers and the general public.[72]

The conclusions of the seminar on road traffic and psychoactive substances organised by the Pompidou Group in 2003 were very positive about the outcomes of training in the recognition of drug-impaired drivers. There is even a reference to the fact that well-trained police officers can detect a large majority (>80%) of drivers who eventually turn out to be 'positive' (i.e. either drugs are subsequently found through testing, or an expert opinion confirms impairment due to drugs).[14] Although training is often referred to in the context of police officers, who tend to be the front-liners when it comes to screening drivers for impairment, the importance of training for all professionals who may be involved in the drug-testing process, including medical professionals, should be strongly considered to ensure the reliability and effectiveness of the process.

5.4 Considerations when Implementing Enforcement Measures

5.4.1 Cost-Benefit Analysis

The effectiveness of any law is determined by the degree to which it can be enforced. If a law is implemented, but is not enforced, the general deterrent effect will be expected to fail.[47] One of the main considerations when it comes to enforcing legislation is how much this will cost and whether the impact will be sufficient to justify the investment. This kind of information can be gleaned from a Cost-Benefit

Analysis (CBA), such as that conducted as part of the DRUID project.[73] The aim of the DRUID CBA was two-fold:

1. To understand the economic benefits to society of enforcing drug-driving legislation, and
2. To identify which of the existing oral fluid screening devices is the most profitable to use. Data from three countries were used to carry out the relevant analysis.[23]

This CBA found that the use of road-side oral fluid testing is potentially cost-beneficial in countries where the level of enforcement is currently low. It was also concluded that such increased measures should go hand in hand with, and not eclipse, measures put in place to combat drunk-driving, which remains the greater threat to road safety overall.[73]

In the context of assessing the costs and benefits of enforcement measures, data on the prevalence of drug-driving in the local population needs to be considered. Such studies can help determine the best device to be used (with better devices contributing to a better cost-benefit ratio) and the level of enforcement needed (and which would ultimately make the whole system cost-beneficial).[23] They will also provide an estimate of the number of lives saved, or productivity gains that should be expected, if appropriate enforcement measures are put in place.

5.4.2 Information about Enforcement Measures

Information regarding enforcement measures targeting drug-driving needs to be shared in two ways:

- With other police networks and stakeholders in the law enforcement community
- With the general public

The 2003 Resolution mentioned that information exchange across Member States is necessary to identify best practices on how drug-driving cases are handled, and in order to be able to train all relevant practitioners in the process.[15] Member States were encouraged to provide the Commission and the EMCDDA with timely information on national-level counter-measures against drug-driving, so that monitoring at an EU-level could be made possible. TISPOL has also recommended the exchange of good practices across Member States. Their Policy Paper, 'Enforcing Drug and Drink Driving within Europe' contains best practice examples to reduce the problem of driving under the influence of psychoactive substances and provides recommendations for tackling drug-driving from a law enforcement perspective.[12]

Implementation of a drug-driving law is only likely to reach its full potential if the corresponding enforcement measures are sustained and highly publicised.[47] Media campaigns should be used to shine a spotlight, not only on the legal aspects, but also on the enforcement efforts put in place so as to increase the perceived risk of apprehension. TISPOL has recommended that enforcement must be highly-visible and backed up by education.[12] The ETSC also placed an emphasis on the need to raise the level of publicity around road traffic enforcement measures, and has called on the Commission to specifically support Member States in developing national enforcement plans with compliance targets in the areas of speeding, drunk- and drug-driving, and seat belt use.[41] It is important to note that, among the general population, it is the perceived risk of apprehension by the police that creates the greatest impact, and not

the objective risk.[23] Thus, media coverage of enforcement efforts can do much to help increase their general deterrent effect.

5.4.3 Harmonisation of Enforcement Efforts across Europe

The variation in approaches used in enforcing drug-driving laws across the EU has been described above. Differences exist in terms of the types of screening tests that can be carried out, the procedures for referral for confirmatory testing, and the training available to those involved in the detection procedure.[6]

The Council Resolution of 2003 called for studies on the functioning and effectiveness of tests used for drug-driving across Europe (whether behavioural or toxicological) in an effort to harmonise procedures and develop EU guidelines for such tests.[15] This harmonisation could improve the comparability and reliability of results from different MS. The Council, through this resolution, also invited the Commission to draw up and propose EU-level guidelines (in collaboration with MS) based on identified best practices and concerning the management of psychoactive substance-related cases in the context of driving (e.g. impact of substances on driving, secondary prevention action, or treatment).

TISPOL also urges the harmonisation of approaches to tackle drug-driving across Europe.[12] This will be of particular importance to facilitate the implementation of the 2015 Directive on Facilitating the Cross-Border Exchange of Information on Road-Safety-Related Offences.[34] The conceptualisation of union-level road safety guidelines that would establish "comparable methods, practices and common standards across Member States" is also found in this Directive. The list of topics that should be covered by such guidelines is provided, and while drunk-driving is included, drug-driving is not. This may mean that convergence in the context of drug-driving law enforcement may be considered too complex to achieve at this stage. Nevertheless, the initiative to ensure that even drug-driving offences are investigated, despite Member State of origin, should hopefully sensitise all EU citizens to observe the law no matter where they drive and might serve to raise the profile of this problem on the EU agenda.

5.5 A focus on other Countries

5.5.1 France

Much has already been said about the French SAM study in the previous sections of this review. However, some points regarding the 'enforcement' aspect of the French Law passed in 1999 have not yet been mentioned. Essentially, this law made it obligatory for drug-testing to be carried out for drivers involved in fatal accidents. The advantages related to mandatory testing in this context included the following[19]:

- Since the law allowed for screening of drivers involved in fatal road accidents, the issue of consent was avoided. There was a possibility for drivers to refuse testing, but this was made a punishable offence.
- The police were required to comply with the law and submit the necessary information to researchers with the scope of carrying out a research study.

The SAM study, therefore, is a good example of what can be achieved through

the implementation of legal measures to enforce drug-driving legislation. It also highlighted the importance of fostering collaboration between experts and all stakeholders involved in the enforcement approach from the early stages of drafting a new law so as to ensure its smooth implementation.

5.5.2 Norway

One of the main motivations for Norway to introduce per se limits in 2012 and for making drug screening of oral fluid legally permissible was to simplify the enforcement procedure in place up until that point and reduce the need for expert witness statements in court.[55] According to the new law, Norwegian police can test saliva for drugs as part of road-side controls, on the basis of suspicion, or if a driver is involved in an accident (whether at fault or not).[74] The results of this screening test could then be used as a basis for judging whether further confirmatory testing of a blood sample is needed to determine the concentrations of illicit substances. Although improvements in the system have been noted in recent years, these are mainly attributable to the implementation of per se limits as opposed to the use of oral fluid drug screening. Indeed, until 2014, the lack of adequate road-side testing devices meant that screening using oral fluid sampling was still not being implemented.[50]

In practice, the police in Norway may request *mandatory* blood samples for drug testing if a driver is suspected of drug-driving or when involved in a traffic accident. All blood samples are sent to a central unit (The Norwegian Institute of Public Health) for alcohol and drug testing – a detail that is highly advantageous in terms of the ability of the country to undertake scientific research.[50] A study has shown that enforcing blood sample analysis in the context of suspected impairment results in the detection of no alcohol or drugs above the established per se limits in only 5% of cases.[50] Furthermore, the use of per se limits resulted in a 50% decrease in the need for an expert witness statement between 2010 and 2013.[55] This is thought to reflect more effective detection procedures and increased efficiency of prosecution and sentencing.

Although the implementation of per se limits has reduced the need for expert witness statements in a large number of cases, there are still some situations when the latter are required in Norway. These include cases where impairment is due to drugs for which limits are not available (including in cases where an impairment limit is set but there are no identified limits of graded sanctions), cases when the driver is using a legally-prescribed medication, and cases where more than one substance is detected in the blood sample, but neither one of these exceeds the limit of graded sanctions equivalent to a BAC of 0.12%.[50]

The Norwegian experience is interesting from an enforcement perspective for three reasons:

1. It highlights the technological limitations that may be encountered when enforcing per se legislation.
2. It shows that testing on the basis of suspicion generally results in positive findings vis-à-vis the correlation with confirmatory drug tests.
3. The detection procedure, including the conditions under which expert witness may or may not be needed, is clearly described in the law.

5.5.3 Belgium

In Belgium, the "Loi relative à l'introduction des tests salivaires en matière de drogues dans la circulation" was introduced in 2009, and became operational in 2010.[45] It allowed for the use of oral fluid drug-testing both as a screening procedure and as a confirmatory test. This was the first time in Europe that a law allowing saliva analysis for confirmatory testing in the context of drug-driving was passed.[12] In most countries, blood sample analysis (which usually requires the involvement of a physician and is an invasive test) is required when confirmatory testing is carried out.[5]

Prior to the new Belgian law being passed, the enforcement procedure for drug-driving included the implementation of a battery of 'tests' to detect impairment (e.g. Romberg Test, finger-to-nose test, etc.). If two of these tests were positive, a urine sample was collected and tested for drugs. A positive urine test was followed by a confirmatory test on a blood sample with the latter being required as evidence for prosecution in court.[75] As of 2010, however, this enforcement approach was changed to reduce the challenges associated with urine testing. The new procedure involves the implementation of a standardised checklist that screens the driver for the behavioural signs of recent drug use. If a driver shows at least three positive signs in a minimum of two sections of the checklist, a sample of saliva is tested for the presence of 7 drugs (or their metabolites) – THC, amphetamines, MDMA, morphine, 6-acteylmorphine (a metabolite of heroin), cocaine and benzoylecgonine (a metabolite of cocaine). If the saliva test is positive for just one of these drugs or drug metabolites, a sample of saliva can be taken for further confirmatory analysis at another designated laboratory.[70] Despite the passing of this law, implementation of saliva analysis as opposed to blood sample analysis for confirmatory testing has been delayed. Until August 2014, a transitional period was still in place during which confirmatory analysis using blood samples drawn by a physician was being used in place of saliva analysis.[46] An article published in early 2015 in Forensic Science International states that this is due to the fact that the oral fluid collection system had not yet been identified.[70] Similar to Norway, therefore, technological limitations have hampered the full implementation of the law.

The Belgian law contains information on the different scenarios during which the testing procedure for drugs can be initiated. Any driver or person intending to drive, including driving instructors or persons who intend to accompany an animal (e.g. a horse), can be stopped at random by the police for testing. Anyone involved in a road accident (or who could have contributed to an accident) can also be screened. In this case, the first step (i.e. the standardised checklist) need not be used, and the police can proceed immediately with the saliva test.[45]

A study comparing the old enforcement procedure described in the 1999 law and the new procedure (established in 2009) was launched to ascertain whether the challenges of the older procedure had been overcome, primarily with respect to the high false positive rates of the urine screening test. The article states that the new procedure, using saliva tests as a screening procedure and reduced plasma cut-off levels for confirmatory testing, has indeed reduced the false positive rates of the screening procedure and also picks up 'recent' drug use to a greater extent.[70]

5.5.4 United Kingdom

In the UK, enforcement of the new drug-driving legislation begins when a driver is stopped on the basis of suspicion of impaired driving or if they are involved in a road traffic accident.[59] According to the UK Government website, the following procedure can then be implemented[76]:

- The police may institute a Field Impairment Test (FIT) and/or use an on-site screening device that tests for drugs (currently limited to cannabis and cocaine).
- Should the police believe that a driver is impaired, that person can be arrested and taken to a police station for further testing of a blood or urine sample. (Being taken to a police station for further testing may be done even when the on-site screening test is negative).
- Should drugs be detected when a test is taken at a police station, the driver can be charged with a crime.

The first indications of the implementation of the new legislation in the UK are shedding light on the extent of the drug-driving problem in the UK, or at least, this is the conclusion drawn by the Institute of Advanced Motorists in their 2015 press release.[77] The Institute presented the figures in terms of drug-driving arrests made since the passage of the law. In all, there were just over 900 drug-driving arrests in England and Wales since March, 2015. However, there is a great disparity in law enforcement procedures (both in terms of testing and arrests) across police forces, with some not having made any arrests of this kind until June, 2015. Understanding the reasons for this disparity is key to identifying whether any improvements would need to be made to enable smoother and more effective enforcement of this type of legislation.

5.6 Implications for Malta

In Malta, enforcement of both drunk- and drug-driving legislation still has a long way to go, and much work is needed to drastically change this situation. The Traffic Regulation Ordinance states that a police officer 'may' request for tests on urine, blood, or breath to be taken in order to prove that an individual is or has been impaired while driving.[61] The use of the word 'may' means that enforcement of the law remains at the police officer's discretion. The Ordinance does not indicate instances when testing is mandatory or the nature of an accident that would be more likely to initiate the drug testing process (e.g. fatal or otherwise). There is also no mention of the ability for traffic police to implement random road-side drug screening (in any situation) within the Ordinance, even if the ability for police officers to institute 'road checks' for the purposes of detecting road traffic violations, more generally, is provided for in the Penal Code.[31]

In the case of drunk-driving, a preceding suspicion of impairment or a road accident initiates the testing procedure. Breathalyser-testing for alcohol can be used at the road-side as a screening test and then repeated for confirmation at the police headquarters. The results of breath tests are admissible as evidence in court.[VI]

[VI] Information provided by Magistrate Consuelo Herrera and Malta Police Superintendent Mario Tonna during semi-structured interviews held in September and October, 2015

Unfortunately, in practice, breathalyser testing is infrequently performed due to the unavailability of devices. In the case of testing for drugs on the basis of suspicion or in the case of an accident, a blood or urine sample would be required after the driver's consent for such samples to be taken is achieved. If consent cannot be provided, Magisterial authorisation is required for a blood sample to be taken (as blood is considered an 'intimate sample' in Maltese law). These points make the process highly bureaucratic and inefficient to implement in practice.

Blood or urine samples for drug testing require the cooperation of medical professionals and laboratory technicians. When a driver is hospitalised following an accident, it is the attending emergency physician who collects samples for drug testing. It is important to point out that, within the Maltese public hospital, blood test analysis for some of the commoner and more-problematic illicit drugs, including cannabis, opioids, cocaine, and methamphetamines, is not performed. Blood samples can be used to test for barbiturates, tricyclic antidepressants and benzodiazepines, but urine would be needed to test for most illicit drugs, and such tests are generally performed by foreign laboratories due to the lack of accreditation of the national toxicology laboratory. It is also pertinent to note that, under normal circumstances, the results of drug tests taken in the context of the provision of medical care are not used in a legal context in Malta.

The Traffic Regulation Ordinance explains that procedures for testing for both alcohol and drugs should be drawn up by the Minister responsible for the police, within the Ministry for Home Affairs and National Security. It is the Minister for Transport who determines limits for alcohol (and drug) consumption prior to driving, but it is the Police Force that has the responsibility for 'on-the-spot' assessment of fitness to drive. Among other things, the Minister responsible for the Police Force may make regulations which provide for:

- the procedures to be adopted by the Police in the carrying out of breathalyser tests;
- the determination of the type of device to be used in conducting the breathalyser test;
- the procedure for the sampling of body fluid specimens including blood;
- the determination of a laboratory for the examination of body fluid specimens including blood.

The recent publication of Malta's 2016 Budget document shows that the country will be making renewed efforts to crack down on drunk-driving, both through the use of new breathalyser devices, and through the introduction of heftier fines.[78] It is unclear whether and when any new enforcement procedures related to the use of new breathalyser devices will be put in place. Training for police officers in the use of these road-side devices is envisaged.[vii]

Although concrete measures related to drug-driving are not mentioned in the 2016 Budget document, Malta's National Road Safety Strategy 2014-2020 identifies the elimination of drug-driving as one of the main Strategic Objectives in the section

[vii] Information provided by Malta Police Superintendent Mario Tonna during a semi-structured interview held in October, 2015

on 'enforcement'.[4] In relation to this Objective, the need for strengthening random road-side drug testing, as well as improving public awareness of such programmes, has been listed as one of the actions to be implemented in the medium-term. The Malta Police are identified as the lead authority on this action item, with support obtained from the National Transport Authority (Transport Malta). Although a Strategic Objective and an action item exist in relation to drug-driving, when it comes to measuring progress towards the achievement of this Objective, no related indicator is currently listed. The Strategy states that there is "scope to develop further a national approach to road-side testing for drug abuse." The importance of drug-testing in young drivers (aged 18 to 26 years) is also stressed, given that this age group shows a higher tendency to over-estimate their personal capabilities and under-estimate risky situations.[4]

The following recommendations for Malta can be drawn from the findings of this review in relation to enforcement measures:

Recommendation no. 6 – Malta should consider the introduction of road-side drug screening using hand-held devices and update drug-testing procedures in the relevant laws and regulations.

The introduction of road-side screening for drugs can significantly improve the enforcement of drug-driving legislation irrespective of whether an impairment approach is retained or 'enhanced' through the introduction of per se limits. Road-side screening can provide a stronger basis for police to refer drivers for confirmatory testing and subsequently, to press charges in a court of law. Furthermore, the DRUID project has found that the implementation of road-side oral fluid testing for drugs is cost-beneficial in countries where the level of enforcement is low, as is the case in Malta.[73]

This review of the literature and the experiences of other Member States highlight the problems with the introduction of road-side devices. However, if such equipment is used specifically as a screening measure, then there is promise for some devices using oral fluid as highlighted in the EMCDDA report on the findings of the DRUID project.[23] There is also the possibility of selecting oral fluid testing devices that show higher sensitivity or specificity for those drugs that are identified as being more problematic in the local context. National prevalence studies would be needed in order for the selection of a road-side device to be 'tailored' in this way.

Apart from choosing a road-testing device, the procedure that enables initial and confirmatory testing would also need to be set out. The collaboration between the Ministry for Transport and the Malta Police will be crucial in determining such procedures. **Mandatory blood or urine testing should be implemented in certain situations**, particularly in cases of accidents, and the challenges associated with the need for consent in terms of blood testing should be overcome. The French case-study presented above provides an example that Malta may wish to emulate. The potential for implementing random screening for both alcohol and drugs should also be explored. Random screening creates a high general deterrent effect but may be too costly for local authorities. A way to overcome this is to organise checkpoints at certain times of day and in certain locations where the potential to encounter' drug-drivers is increased. It must also be remembered that random drug-screening is the best approach, should zero tolerance legislation be put in place.

Finally, the **designation of accredited laboratories** where confirmatory testing can be performed and the roles of different players in the drug-testing process need to be included in the relevant procedure. The need for an expert witness statement, as is the case for Belgium, and the circumstances under which such a statement may be omitted, would also need to be described. In Malta, the only government toxicology laboratory is currently not accredited, creating a problem when it comes to the employability of results used for forensic purposes. Rectifying this situation would need to be one of the starting points, should future drug testing procedures be needed as part of the enforcement of drug-driving legislation.

Apart from these considerations, there are also other conditions that need to be in place for enforcement measures to be effectively implemented. These are outlined below.

- *Buy-in from all stakeholders, including medical professionals.*

  Enforcement of drug-driving laws requires a **multi-disciplinary effort** by a number of stakeholders, including politicians, police officers, medical professionals (physicians, toxicologists), and judges. It is evident, from the experiences of other MS, such as France, that ensuring the cooperation of all stakeholders is a necessary starting point in enforcing drug-driving legislation.[14]

  The Malta Drugs Policy (2008) identified a list of bodies that are responsible for preparing and implementing legislation or policies related to drug use/misuse.[79] One of the main goals of the policy is to ensure that the work of the various bodies and entities that are involved in tackling drug use or abuse is coordinated. Similarly, the issue of drug-driving requires the collaboration of a number of national entities and the involvement of Ministries responsible for the following areas: transport, home affairs (Ministry for the Police Force), justice, social policy, health, and education. The Ministry for Education needs to be involved since it has the power to influence the transmission of prevention messages related to drug-driving to students from an early age. The Health Ministry's involvement is required because of the role of medical professionals at different points in the drug-testing process.

  Maltese medical professionals often complain about being called to testify in court cases when hospitalised drivers are charged by the police for the commission of road traffic offences. Their involvement in the process is seen as disruptive to their schedule and is often time-consuming, especially since such proceedings are often repeatedly postponed. Furthermore, there is a resistance to being involved in drug testing for forensic purposes because of the possible negative implications this could have on patient–doctor relationships. Indeed, the right approach would need to be established to ensure that individuals under the influence of drugs do not fear seeking medical attention if and when needed. To overcome such challenges, police-appointed medical professionals responsible for the specific implementation of behavioural and/or toxicological testing in the context of drug-driving may be required, **creating a separation of the patient care and law enforcement processes.**

- *Availability of equipment.*

Considerations regarding the choice of road-side device that could be used in Malta have already been outlined above. As oral fluid testing devices become more accurate, confidence with using such devices in the local context should increase. The availability of laboratory equipment for confirmatory testing (e.g. GC-MS and LC-MS/MS) and the type of biological fluid that can be tested (e.g. saliva, urine and blood) would also have to be considered. **If such equipment is not available or is out-dated, this could hamper the ability to enforce any drug-driving legislation.**

- *Cost-Benefit Analyses and Impact Assessments.*

The implementation of a screening procedure for drugs at the road-side will only work in the long-term if there is sufficient funding to cover the related costs. Three countries performed a CBA in relation to the implementation of oral fluid road-side testing as part of the DRUID project.[73] The UK also undertook an impact assessment as part of the background work in deciding which legislative option should be implemented when setting out per se legislation for drug-driving.[59] Undertaking a **CBA will be important to identify the best type of road-side testing and the level of enforcement that could be most cost-beneficial in a country like Malta.**

Factors that would need to be taken into consideration in such a cost-benefit analysis include the expenses involved in accrediting the local toxicology laboratory, the costs of providing the equipment required for both initial and confirmatory testing, the costs of mounting road-side checks or increasing the number of traffic police on patrol, and the number of lives saved from the enforcement measure being evaluated. Statistics on the number of fatal road accidents involving drunk- and drug-driving, as well as prevalence rates of the 'problem' drugs, the profile of drug-drivers, and drug-driving patterns in a local context, would also be necessary to feed into the cost-benefit analysis.

- *Publicity/exposure.*

The implementation of all enforcement measures should be highly publicised so as to increase the public's perception of the risk of being apprehended for breaking the law. Campaigns targeted at certain groups of drivers and increased exposure to the results of road-checks, can help in achieving the deterrent effect expected of any change in legislation.

Recommendation no. 7 – Training of all players involved in the detection procedure should be mandatory.

As part of the renewed efforts to tackle drunk-driving in Malta, training for police officers in the use of new breathalyser tests is envisaged. In a similar way, training in the use of any equipment used in the drug-testing process should also be instituted if road-side screening for drugs is to be introduced. Training for medical professionals, whether doctors, toxicologists, or any other medical specialist that may be involved in the testing process, should also be provided. Such training should be guided by the legislation. Also, any procedures put in place to standardise the detection process from initial testing, to confirmatory testing, and then reporting (possibly in a court sitting), should be clearly outlined in the legislation.

As long as drug-testing of biological fluids remains a remote possibility, traffic police officers should also be enrolled in mandatory training for impairment recognition using behavioural signs. Training on the use of a few basic road-side tests to look for physical signs of impairment should be implemented as soon as possible, to facilitate the enforcement of a law that is currently failing road users. Tests do not need to be long or complicated, but they should be sensitive enough to detect impaired skills related to driving ability.

Recommendation no. 8 – Malta should explore opportunities to exchange information and learn from the early experiences of new legislative and enforcement measures being implemented in other Member States.

Although Malta is behind when it comes to the enforcement of drug-driving legislation, a lot of work in this domain has already been undertaken by other European MS. These experiences present an occasion for Malta to understand the opportunities and challenges that the enforcement of drug-driving legislation could present. There is much to be learnt in terms of the practicality of using road-side devices, the sensitivity of behavioural tests to detect impairment, and the availability of training programmes for police officers and other players involved in the drug-testing process. The engagement of police officers in fora such as TISPOL, which supports exchanges on enforcement measures used in different countries, is a good place to start if Malta wishes to catch up with the rest of Europe in this area.

6. Sanctioning

Sanctions are implemented to penalise drug-driving behaviour and to deter people from breaking the law in the first place. There are two types of deterrence; 'general deterrence', which refers to the ability of measures, including sanctions, to discourage individuals from committing a drug-driving offence, and 'special (or specific) deterrence', which is aimed at people who have already committed a crime in an attempt to reduce the risk of recidivism.[80]

As with enforcement measures, the "certainty, celerity and severity" of sanctions are the three most important factors influencing the deterrent effect. The "certainty" of being penalised and the 'celerity' or swiftness with which sanctions are imposed are seen as being more important than the severity of the sanctions in deterring the offending behaviour.[47] This means that the process of prosecuting drug-driving cases should be efficient and consistent, and the public needs to be convinced of this through information transmitted through the media. "Consistency", here, refers to the ability to successfully prosecute and sanction all detected drug-drivers apprehended by the police, as well as the imposition of sanctions of similar severity when drug-driving offences of a similar nature are committed. The 2015 EU Directive on Information Exchange of Vehicle Registration Data has made some improvements in ensuring that foreign drivers do not evade sanctioning when driving outside their home country.[34] This promotes consistency in terms of the risk of sanctioning for drug-driving offences across Europe. However, in the case of this Directive, the type and level of sanctions imposed for drug-driving offences is left to the discretion of national authorities.

There are two procedures that may be used to implement sanctions, namely judicial or administrative. There are differences between judicial and administrative procedures in terms of their potential impact on the certainty, celerity, and severity of sanctioning.[47] Administrative procedures may be quicker and easier to implement and also allow for greater consistency in the severity of sanctions imposed. Judicial procedures are hampered by longer delays and stricter evidence requirements. Furthermore, the severity of the imposed sanctions may be perceived as being too variable from one case to the next. On the other hand, the fact that the law courts have a wider range of available sanctions may be advantageous given that drug-driving is a complex matter and the specific life-situations of certain individuals may need to be taken into consideration. It is interesting to point out that the DRUID project did not make a recommendation regarding the best type of sanctioning procedure, i.e. administrative vs. judicial (criminal).[23]

Different types of sanctions and sanctioning procedures exist across the EU.[6] The advantages, and potential disadvantages, of each are discussed below. The use of rehabilitation for drug-drivers who are charged with an offence is also described.

6.1 Suspension of a Driving Licence

One of the measures that can be taken against a driver convicted of a drug-driving offence is to restrict their ability to drive through driving licence-related measures. Annexe III of the Directive 2006/126 of the European parliament and of the Council of 20 December 2006, on driving licences entitled: 'Minimum standards of physical and mental fitness for driving a power-driven vehicle' specifies that requests to

issue or to renew a driving licence in cases of drug dependence or regular abuse of psychotropic substances should be refused, regardless of driving licence category. However, it is unclear how this directive is being implemented in different MS.[33] If the implementation of the Directive's recommendation for legally-prescribed medicines is anything to go by, it seems very difficult to find commonalities across the EU.[23]

The withdrawal of driving licences in the context of drug-driving has been recognised for its general deterrent as well as its special deterrent effect.[47] The DRUID analysis found that 19 out of 27 EU and 3 non-EU countries implemented licence-withdrawal sanctions for drug- and drunk-driving.[23] In the majority of cases, withdrawal was for a temporary period, although the actual length of time varied significantly across MS (from less than 6 months to more than 24 months). The suspension period may vary depending on whether drug-driving is considered a criminal or a non-criminal offence or whether impairment legislation vs. zero-tolerance legislation is being applied. Some countries, e.g. Slovenia, use a penalty point system, whereby a drug-driving offence results in the imposition of these points for a significant period of time.[6] Controversy exists about whether the suspension of a licence (or any other sanction, for that matter) should be implemented at the road-side on the basis of a screening drug test.[5] This is referred to as an 'administrative road-side sanction' and Belgium was the first country in Europe to implement such a measure in recent years.[11]

According to the findings of the DRUID project, the use of the licence withdrawal sanction is considered more effective than prison sentences or fines, as long as two conditions are also met. The first condition is that licence withdrawal is implemented quickly, and the second is that the period of withdrawal is between 3 and 12 months but not longer.[23] The deterrent impact of shorter and longer durations of licence withdrawal has not been proven by empirical primary research. A longer withdrawal period may be counterproductive, as it may increase the incidence of driving without a licence.

Two points need to be considered in implementing licence-suspension measures. The first is that problem consumers of drugs, as well as addicts, would need rehabilitation in addition to the imposition of such sanctions, and the second is the need to specify the re-granting procedure for driving licences (as this lends to the impact of the withdrawal measure.[47] For drivers who are not problem drug users or abusers, the use of specific educational programmes as part of the licence re-granting procedure may be beneficial.[23] For those drivers with substance abuse problems, the implementation of conditional re-instatement of a driving licence could be more supportive of the driver's re-integration into society. 'Conditional re-instatement' refers to the re-granting of a licence provided that the driver fulfils certain requirements, e.g. enrolment in a rehabilitation or treatment programme and participation in regular medical checks.[23] A TISPOL policy paper also made a recommendation regarding individuals on substitution treatment. According to this police network, such individuals should be given a conditional licence following a fitness to drive examination and should be monitored through a number of follow-up controls (to ensure abstinence of parallel consumption of other drugs).[12]

6.2 Fines

Fines are often used to sanction drug-drivers. As with driving licence suspensions, there is considerable variation across MS in terms of the volume of the fines implemented.[6] Factors that may influence the heftiness of a fine include whether the drug-driving offence is associated with another crime (e.g. damage or injury to another person or object), the nature of the drug-driving offence itself (criminal or not), and if the case involves professional drivers.[6] The DRUID project has recommended that fines should be calculated on an individual basis and be equal to one-third or one-fourth of the average monthly income.[47] The experience with drunk-driving is that the volume of fines needs to create a financial burden for the offender in order for these to deter the offending behaviour.[81] Furthermore, the use of fines has been found to have a very good impact in deterring drunk-driving among adolescents.[47] Given these findings for alcohol, one can assume that the use of fines as sanctioning measures can be effective in deterring drug-driving. The social acceptance of fines as opposed to jail terms is also higher, and fines have the additional advantage of providing a source of funding for prevention campaigns.[81]

6.3 Imprisonment

In terms of drunk-driving, prison sentences are not regarded as effective general deterrent measures, and may not even be effective as special deterrence measures for recidivists.[81] Since drug-drivers are expected to be either recidivists or adolescents, the effect of prison sentences on drug-driving was explored by the DRUID project. The conclusion was that prison terms would be expected to have only 'modest' general deterrent effects.[47] In terms of special deterrence, researchers have recommended that the optimal duration of a prison sentence is 6 months in the case of drunk-driving.[82] However, given the overall lack of evidence for the impact of prison terms as a special deterrence measure for drunk-driving, it was difficult to make appropriate conclusions for drug-driving.[47]

Countries vary in the implementation of prison sentences as sanctions for drug-driving. While some countries may send a driver charged with drug-driving to prison, others would only implement such sanctions if the offence is committed by a recidivist or a professional driver and if there is also a charge of drunk-driving, or as a result of damage, injury or death to a person.[6]

6.4 Rehabilitation

The referral of drug-drivers to rehabilitation or even treatment programmes should be considered as part of the sanctioning procedure, particularly if chronic drug abuse is involved.[81] The DRUID project looked at driver rehabilitation schemes across the EU and found differences across countries, including the availability of such schemes on a voluntary or obligatory basis.[23] While 12 European Countries offered programmes for drunk-driving offenders, only four of the 12 simultaneously offered programmes for drug-drivers (Austria, Belgium, Germany and Portugal). The DRUID project recommended that drug-drivers should be 'treated' separately from drunk-drivers, and that non-addicted drivers should also be separated from drivers identified as problem drug users.[23]

Countries have been urged to draw up regulations or fixed standards specifically tackling driver participation in rehabilitation programmes, e.g. making it a pre-condition to a reduction in the licence withdrawal period or for reinstatement of the licence after a driving ban.[23] Driver assessment prior to rehabilitation should be obligatory in cases of suspected drug addiction in order to match offenders to appropriate treatment.[83] For those drivers with long-standing addiction problems, including those on substitution treatment, a tailored approach based on individual assessment of the overall ability to drive would be necessary. In all cases, addicts would need to be managed separately to non-addicts.[23]

EU-level guidelines for the rehabilitation of both drug- and drunk-driver rehabilitation procedures should be formulated. DRUID has contributed to this work through the development of standards and recommendations of good practice for driver rehabilitation measures, and the creation of the 'Driver Rehabilitation Evaluation Tool' or DRET.[83] In cases of non-addicted drug- or drunk-drivers, use of group rehabilitation interventions involving therapeutic, psychological and educational elements may be beneficial.[23] The 2003 Council Resolution stressed the importance of collecting and evaluating information on the rehabilitation of drivers accused of drug-driving so as to develop tailor-made early-intervention programmes.[15]

6.5 Probation

Positive findings with respect to the deterrent effect of probation on first and repeat drunk-driving offenders may be valid for drug-driving. However, consideration of other measures beyond the surveillance of drivers may be needed, e.g. licence withdrawal and conditional re-instatement with periodical medical re-assessment.[23]

6.6 Use of Sanctions in Different Groups

According to a report evaluating the effectiveness of legal measures in preventing drunk- and drug-driving, the 'choice' of sanctions may need to be tailored to specific target groups as follows to ensure that a deterrent impact is achieved:[47]

- Adolescent and novice drivers can be grouped together, and it may be necessary to consider special sanctions for this group given the increased risk of accidents resulting from inexperience with driving and inexperience with the consumption of psychoactive substances. Driving under the influence of most drugs (particularly cannabis) is also more problematic in adolescents, especially males. As explained in the different sections above, the use of fines (which young people would find difficult to pay), driving licence-related measures (e.g. suspension or penalty points), and group rehabilitation programmes, may be sufficient to create a deterrent effect.
- Problem consumers of drugs may not be affected by the implementation of sanctions without treatment of the underlying drug problem and rehabilitation also being included.
- Poly-drug or drug-alcohol combinations also present a significant risk to road safety by increasing the level of overall impairment. More severe sanctions may be needed in these cases.
- Recidivists are also worth mentioning as these contribute to the problem of drug-driving and require different measures to deter further offences. Apart from harsher penalties for repeat offences, rehabilitation and treatment may also be needed if the cause for recidivism is a continuing drug problem.

6.7 A focus on other Countries

As explained above, Norway was the first country in the world to establish per se limits for non-alcohol psychoactive substances equivalent to BAC levels 0f 0.02%, 0.05% and 0.12%.[10] The main incentive for this shift in legislation was to 'harmonise' sanctioning policies for both drunk- and drug-driving. In Norway, BAC levels between 0.05% and 0.12% are punished with conditioned imprisonment, while levels above 0.12% result in unconditional prison sentences.[84] Similarly, for drug-driving, drug levels equivalent to 0.02%-0.05% will result in a fine, drug concentrations equivalent to BAC levels between 0.05% and 0.12% result in a fine and conditioned or unconditioned imprisonment, while a drug level equivalent to a BAC of >0.12% will result in a fine and unconditioned imprisonment.[74] Fines are generally proportional to the offender's monthly salary and harsher sentencing may be imposed if both alcohol and drugs exceed the legal limits. Driver licence withdrawal may also be implemented in cases of drug-driving offences and a licence may be revoked for life if a driver is a recidivist within a five year period, and has surpassed limits of graded sanctions.

Setting limits of graded sanctions emphasises the seriousness attached to driving when influenced by higher concentrations of drugs, something which may be lost when sentencing is applied in cases using a zero tolerance approach. Traditionally, the use of harsher penalties in different countries has been tied to factors associated with the drug-driving offence, for example, whether there was any endangerment to property or persons, whether the individual was driving in a professional capacity, or whether previous or repeated offences were committed.[85]

In Belgium, a driver's licence may be suspended for a 12-hour period if a screening saliva test is positive for drugs, or if signs of impairment are evident despite an initial drug screen not being performed (e.g. if the driver refuses, or it cannot be undertaken).[45] As mentioned above, this is the first example of an administrative road-side sanction being implemented in Europe.[11] The public prosecutor can subsequently also suspend the driver's licence for a period of 15 days. After being taken to court, possible sanctions to be imposed by Belgian law include fines and licence suspensions. The penalties for recidivists are even harsher (i.e. increase in fine amounts and duration of licence suspension periods) and can then include imprisonment.[75]

The sanctions imposed in the UK for an offence of drug-driving include a minimum 12-month driving ban, a criminal record, and a fine of up to £5000 or up to 6 months in prison or both.[76]

6.8 Implications for Malta

Article 15(1)a of the Traffic Regulation Ordinance states that any person who drives a motor vehicle (or any other vehicle) in a reckless, negligent, or dangerous manner, shall be guilty of an offence and be liable to a fine not exceeding €232.94 or to imprisonment not exceeding three months.[61] In addition, the court shall disqualify the holder from holding or obtaining a driving licence, in the case of a first conviction, for a period of not less than 3 months, and in the case of a second or subsequent conviction, for period of not less than a year. Article 41 also makes provisions for damages to be paid by the owner of a car who has caused damage to the property of

others, as a result of driving of a motor vehicle in a reckless, negligent, or dangerous manner.

In Malta, new drivers are issued with a 'probationary driving licence' for a period of three years, during which penalty points may be imposed for traffic-related offences.[86] Accumulation of twelve penalty points or more results in revocation of the driver's licence and an effective ban of three months prior to being able to start the process of obtaining a new probationary driving licence. Between 3 and 11 penalty points can be imposed if a driver is found to be unfit to drive due to drugs. A similar range of points is also instituted for other offences that could be related to drug-driving, e.g. reckless, negligent, and dangerous driving. It is highly advantageous that the legislative framework for a penalty point system for drug-driving in cases involving novice drivers is already in place in Malta, however, the implementation of this sanctioning process remains highly dependent on the ability of police officers to enforce any related legislation.

With respect to the implementation of the EU Driving Licences Directive in Malta, the provisions mentioned in Annexe III of the Directive related to psychoactive substances apply locally. The Motor Vehicles (Driving Licences) Regulations state that a driving licence should not be issued or renewed for any person who is dependent or regularly abuses psychotropic substances, or who uses quantities of these substances that would have an adverse effect on driving.[86] In theory, therefore, users of psychoactive substances should not be allowed to drive.

The following recommendations on sanctioning can be made for Malta:

Recommendation no. 9 – Malta needs to explore the best sanctioning options available to deter drug-driving on a local level by involving all stakeholders.

Given the variation in the sanctioning procedures used in other Member States as well as the limited evidence on the effectiveness of these approaches to deter drug-driving, Maltese authorities should initiate a discussion on a local level to develop a procedure tailored to the national context. The type of penalties that would need to be imposed, their potential general and special deterrent effects in the case of drug-driving (which may be different from drunk-driving), and how the penalties would be imposed (e.g. through judicial or administrative procedures), are all matters that need to be discussed. The stakeholders that should be involved include the Police, the Justice Ministry, the National Coordinating Unit on Drugs and Alcohol, and the agencies and not-for-profit organisations involved with the provision of services to drug users/abusers. The general public must also be consulted, as the social acceptance of the sanctions being proposed has a huge impact on the compliance of the public with drug-driving laws.

Recommendation no. 10 – Malta should consider the implementation of better procedures targeted at problem drug users, and drivers using substitution treatment.

Problem drug users should be targeted with specific and tailored approaches to reduce their risk of engaging in drug-driving behaviour. When drivers who are caught drug-driving are recognised as having problems with addiction, the implementation of any sanction should be coupled with a referral of the driver to a treatment service. If the sanction involves revocation of the driving licence, earlier re-instatement of the licence can then be considered if the driver shows progress in their treatment. The re-granting procedure should be coupled with a medical assessment that is repeated on a regular basis to ensure compliance with the law.

For those on substitution treatment, individual assessments of fitness to drive should also be implemented and repeated on a regular basis to seek assurances regarding continued abstinence from the concomitant use of other drugs. The risks and benefits of conditional licences versus (full) revocation of driving licences in drivers using opioid detoxification services would have to be weighed up, and further research, even on the local level, may be needed to clarify the mixed and inconclusive findings of the influence of methadone on driving ability in persons on long-term substitution treatment.

7. A note on Education and Prevention approaches

7.1 Awareness-Raising and Education

One issue that is of great concern is the lack of awareness among the general public of the potential impact of drug-taking on driving ability, and the potential multiplicative effect of mixing different drugs, or drugs and alcohol.[5] Educational approaches that raise awareness of the effects of psychoactive substances on the ability to drive are needed in order to improve this situation. The launch of mass media campaigns is one approach, but, to be effective, these need to be shaped around the audience being targeted and on the issues most pertinent at a local level.[47] A one-size-fits-all approach is more likely to fail in the context of drug-driving.

The EU Council Resolution of 27 November, 2003, on Combating the Impact of Psychoactive Substances Use on Road Accidents, stressed the importance of prevention and information campaigns tailored to specific cultural and social contexts, and targeting young audiences.[15] It also mentioned the importance of the involvement of adolescents, as well as families, schools and health practitioners, in this process. TISPOL and the EMCDDA have echoed these recommendations.[12,30]

The value of information campaigns is not only in spreading a message but also in bringing about behaviour change. The DRUID project analysed information campaigns addressing drug-driving used in 13 different countries (including the US, Australia and Canada).[23] Out of 75 campaigns, only 7 provided information on their impact, with all reporting a positive outcome. Unfortunately, however, the impact of the campaign was generally measured in terms of 'awareness' as opposed to actual behaviour change. To overcome the challenge of lack of evidence on the effectiveness of information campaigns, DRUID recommended that guidelines for the evaluation of road safety campaigns put in place by the EU's 'Campaigns and Awareness-raising Strategies in Traffic Safety' (CAST) project should be used in the future.[23]

The media should not only be used to raise awareness of the potential impact of drugs on driving, but also to inform the public on changes in legislation and enforcement approaches taking place at a local level. Presenting information about such efforts and the scientific justification behind legal limits included in per se legislation, for example, could help increase the social acceptance of this law and increase the perceived risk of apprehension.[47]

The ultimate goal of information and educational approaches to drug-driving is to bring about a change in mentality, and increased social disapproval of this specific behaviour. This phenomenon has already been observed for drunk-driving, and has been found to have a significant general deterrent effect on drivers.[12]

7.2 Prevention Approaches

Over the years, a number of measures have been put in place or recommended to prevent individuals from driving while under the influence of drugs. These could be emulated in the local context, and include:

- Increasing the availability and use of public or alternative transport, particularly by young people, as recommended in the 'Resolution of Representatives of the Member States on the Prevention of Recreational use of Drugs' (Cordrogue 2 Rev 3, 15-4-2002).
- Identification of potential drug-drivers in recreational settings, and involvement of the managers and owners of such places in the implementation of prevention campaigns. The Pompidou Group released a publication (2010) on 'Prevention interventions in recreational settings'.[87]
- Including drug awareness training as part of the driving licence course (Sweden) and training of driving school operators on drug-driving, so that they can propagate prevention messages and sensitise their students (Italy).[5] It appears that 'Agenzija Sedqa', a Maltese government agency that provides care and preventive services for people with addiction problems, already offers some courses related to raising awareness of the risks of driving while under the influence of drugs or alcohol, primarily for people applying for a special license.

8. Conclusion

For people under the age of 45, traffic accidents remain the main cause of death, and alcohol has been implicated in a large portion of these fatalities.[39] Although the involvement of drugs is not as easy to estimate, it is evident that driving under the influence of any psychoactive substance is a major road accident risk and needs to be addressed, especially if the Commission's target of halving the number of road deaths in the EU between 2010 and 2020 is to be reached.

In 2003, the Council Resolution on 'Combating the Impact of Psychoactive Substances Use on Road Accidents', invited the Commission to launch a number of actions in the context of driving under the influence of psychoactive substances.[15] Indeed, the early 2000s saw the launch of a number of initiatives, including a handful of EU-level research projects, focused specifically on drug-driving. The work that was conducted in the framework of these large-scale projects has helped respond to some of the identified gaps in the research landscape. Nevertheless, it is largely recognised that research on drug-driving lags significantly behind that on drunk-driving. In 2014, the EMCDDA also concluded that the ability to compare scientific evidence remains limited until now.[1] It would seem unfortunate, therefore, that another initiative to follow up the activities of DRUID (the last in a sequence of drug-driving research projects) has not been launched to date.

One of the most significant findings highlighted in the literature is that the legislative, enforcement, and sanctioning approaches used to tackle drug-driving can vary significantly across European countries.[6,47] This stands in contrast to the increasingly aligned approaches used by Member States to tackle drunk-driving.[42] The lack of an overarching EU legislative framework specifically targeting drug-driving does little to help the situation. Guidance documents, however, are becoming available through the work of dedicated groups such as TISPOL, the Pompidou Group, and the EMCDDA.

Drug-driving is a topic that needs to receive increased attention at EU-level and even more pressingly, on a national level. Malta needs to make a huge leap forward in this respect, as current efforts to combat impaired driving due to both alcohol and drugs leave much to be desired. The starting point is the collection of data and the implementation of research focused on the drug-driving problem in Malta. The collection of data may require bold moves from government and the passage of dedicated legislation, similar to the approach used by France in 1999.

Scientific evidence should be the basis for any future decisions made regarding the best laws, enforcement and sanctioning measures to be applied in Malta to effectively tackle drug-driving. Updates to local procedures and sanctions related to drunk-driving take effect in 2016 and should be seen as an opportunity to take the first steps towards more effective drug-driving counter-measures. Indeed, implementing reinforced measures to counter drunk-driving would seem 'contradictory' if other 'causes' of impaired driving (including drugs) are not dealt with in the same way.

Legislation that includes legal limits, coupled with the availability of road-side devices that can screen drivers for drugs, would be a means to approximate the current approaches used for drunk- and drug-driving. However, implementing such legislation requires political will and buy-in from a number of local stakeholders. Furthermore,

the costs and benefits of any intended changes in legal and enforcement approaches need to be weighed up, to ensure that the best outcomes can be achieved without creating a significant financial burden to society at large.

There is a lot Malta can learn from the early experiences of other Member States in implementing new approaches to tackle drug-driving. Consultations with other countries will be key in understanding the potential challenges one should expect when implementing stricter drug-driving rules. On a European level, Malta should engage itself in platforms, conferences, and fora that specifically address drug-driving, as these could be the starting point for exchanges of best practice. These experiences, however, must be contextualised in the local situation, and the peculiarities of this small island nation would need to be factored in while drug-driving counter-measures are developed.

The recommendations provided for Malta in the different sections of this review need to be discussed in the right fora, bringing together all relevant contributors. This debate needs to begin as soon as possible, given the road safety risk posed by drug-drivers, and the recent depenalisation of drug possession for personal use. It is important that the Maltese government sends out the right message, and does so in a timely manner, i.e. "simple possession of illicit drugs may be depenalised but getting on the roads and risking the lives of others is a road safety matter, and measures will be taken to punish anyone engaging in that behaviour".

This message, as well as information about drug-driving in general needs to reach the general public through a mix of approaches, including media and educational campaigns. The best way for people's perceptions to change is to actually increase the presence of traffic police on Maltese roads, and breathe new life into the existing drug-driving legislation.

9. References

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10. Annex - Links to Maltese documents referred to in drafting this Report

Reports, and Policy and Strategy Documents

Malta Drugs Policy 2008

http://www.emcdda.europa.eu/attachements.cfm/att_50773_EN_Malta%20Drugs%20Policy%202008.pdf

Road Safety Strategy Malta 2014-2024

http://live.transport.gov.mt/admin/uploads/media-library/files/RSS%20Book%20MTI%20v5%20final.pdf

Malta - New Developments and Trends. 2014 National Report (2013 Data) to the EMCDDA by the National Focal Point

http://www.emcdda.europa.eu/attachements.cfm/att_239651_EN_MT%202014%20Annual%20Drug%20Report%20(data%202013).pdf

Malta Budget Document 2016

https://mfin.gov.mt/en/The-Budget/Documents/The_Budget_2016/Budget_Document_2016_English_Final.pdf

Legislation/Regulations

Penal Code (Cap. 9)

http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=8574

Traffic Regulation Ordinance (Cap. 65)

http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=8616

Dangerous Drugs Ordinance (Cap. 101)

http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=8641

Medical and Kindred Professions Act (Cap. 31)

http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=8591

Drug Dependence (Treatment Not Imprisonment) Act

https://mjcl.gov.mt/en/ministry/Documents/DrugDependenceAct_76-2014-E.pdf

Motor Vehicles (Driving Licences) Regulations

http://www.justiceservices.gov.mt/DownloadDocument aspx?app=lom&itemid=9203

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