ROPS

Driving under the influence of psychoactive substances

Summary

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1. Introduction and context

In 1999, Belgium introduced a law on driving under the influence of certain illegal drugs. This law was based on the scientific knowledge about the effects of illegal substances on fitness to drive. The scientific knowledge about driving under the influence of psychoactive substances has considerably increased since this law of 16 March 1999 came into force. Neither the legislation nor its application has been evaluated and adapted to these new insights. Therefore, the Belgian Science Policy has taken the initiative to support a survey intended to draw up recommendations for a more efficient enforcement policy. These guidelines are to be based on the present knowledge about the effects of psychoactive substances on fitness to drive and on the accident risk, and on the knowledge about the current application of the legislation on driving under the influence of illegal drugs and the driving licence.

2. Structure of the report

In the introduction, both main and side effects of illegal drugs and medicines on the driving behaviour are described. In addition, the national and international legal framework for driving under the influence of illegal substances are described. Regarding fitness to drive, the medical conditions to obtain and keep a driving licence, the applied procedures, the role of the GP and the relevant European Directive are described.

Furthermore, an exhaustive literature study was conducted on the influence of legal and illegal drugs and medicines on fitness to drive and accident risk. Four types of studies were analysed: recent experimental studies, recent epidemiologic data, new developments in the prevention of drink driving and the consequences of the combined use of alcohol and drugs. Wherever possible, meta-analysis of the available data was conducted.
Parallel to the literature study, a survey was conducted about the legislation and enforcement regarding driving under the influence of psychoactive substances in a number of European and non-European countries. In this survey, relevant legislations were studied by consultation of publically available information, and the police filled out written surveys. The European initiatives were discussed as well.
Various initiatives were taken to evaluate the application of the procedure in Belgium. Surveys were conducted among local and federal police, police schools, accredited laboratories and public prosecutors. The research team observed targeted controls organized by the local and federal police. Based on data of the federal police and the police zone of Antwerp, the reliability of the test battery was analysed. An attitude measurement, organised by the Belgian Road Safety Institute, provided data on the subjective likelihood of getting caught and the subjective likelihood of being punished. The applicable legislation was analysed and the prosecution and punishment was checked by means of the statistics of the information processing centre of the FPS Justice. Moreover, the legal framework concerning (medical) fitness to drive was analysed.

The results of the previous studies revealed the problems of the current procedure for driving under the influence of drugs (DUID). Based on these observations, preliminary recommendations were drawn up on criminal policy, fitness to drive, driving licence, blood tests, awareness-raising and communication campaigns. Based on the observed shortcomings, topics for further research were defined.
The preliminary recommendations were discussed with national experts from justice (police judges), the Public Prosecutor (national officials of the office of the public prosecutor), police,

laboratories, emergency departments and officials of the federal public services justice, internal affairs, public health and mobility.
Afterwards, the preliminary recommendations were adapted and presented for comments to six international experts. Each on their own, these experts have given their comments and suggestions. These were collected, moulded into recommendations and anonymously presented to the same experts. This procedure was followed until a consensus was reached. At the same time, the recommendations were presented to a expert in Belgian penal law.
Based on the comments of the experts, the preliminary recommendations were adapted where necessary and were transposed into final recommendations.

3. Results and recommendations

The results of the literature study show that along with alcohol, drugs are a major road safety problem. The results of the recent experimental studies demonstrate that psychoactive substances can affect the driving skills. A meta-analysis of data of recent epidemiological studies shows that drivers under the influence of drugs do participate in traffic, and that the percentage of drivers under the influence of cannabis (4%) is only slightly lower than the percentage of drunk drivers (5.3%). Benzodiazepines are found among 2.5% of the drivers, cocaine and opiates among 1% and amphetamines among 0.8% of the drivers. Recent polls show that about 3.6% of the population admits that they drive under the influence of illegal drugs. This percentage amounts to 15% among youngsters, and among drug users it is as high as 85%. Moreover, numerous studies show that drivers under the influence of drugs have a higher risk to cause or to get involved in an accident. A meta-analysis from this report shows that people driving under the influence of cannabis, benzodiazepines and opiates are respectively 2, 2.5 and 3 times more likely to get involved in an accident than normal drivers. This all goes to show that an efficient legislation on DUID is necessary.

Based on the conducted polls, we noticed that the number of controls remains rather limited: in the period from 2000 until 2004, 3810 DUID cases were detected. The police organises few controls because not many police officers have had a special training and because the roadside tests are complicated and take a lot of time.
Almost all offences mentioned on the police reports are pursued; the official prosecutor dropped only 52 cases. Apart from pursuing the offences, the public prosecutor withdrew the driving licence of 1103 drivers.
One hundred and ten drivers were acquitted from charges by the court. The most current sentence is the minimum fine of € 200 (with surcharge included: € 1100) and a deprivation of the right to drive.
Aside from the objective chance of getting caught, the subjective likelihood of getting caught for DUID is limited as well. The attitude measurement of the Belgian Road Safety Institute reveals that 70.5% of the interviewees think that they have few or very few chances of getting controlled for DUID[1]. Furthermore, many people seem to be convinced that even if they get caught for DUID, the likelihood of getting punished is low or very low (33.5%).

The conclusions and the solutions that the researchers describe in the report can be subdivided in five themes and are further discussed according to this subdivision. Covered topics are the lack of data about the accident involvement of drivers who used illegal drugs, practical problems, problems with regard to the prosecution by the Public Prosecutor, adaptations with regard to the legislation, fitness to drive and driving licence, and

[1] Silverans, P.; Drevet, M.; Vanlaar, W: 'Attitudemeting verkeersveiligheid 2003 – 2004' Belgian Road Safety Institute, Behaviour and Policy Department. www.bivv.be

modifications with regard to the analysis of blood samples. Apart from the research objectives, but with a view of further improving the procedure and to gather more knowledge about it, suggestions are formulated on awareness-raising, communication and further research.

3.1. Lack of data

Research shows that in Belgium, there are no recent data on the number of drug-related accidents. In some countries, the blood of all drivers who are involved in a fatal car accident is examined in order to check the presence of psychoactive substances. Hence, it is possible to conduct scientific research on the influence of the use of these substances on the accident risk. In France, it has been shown that a driver is more likely to be involved in a fatal accident when he is under the influence of cannabis (odds ratio = 2). The higher the cannabis concentration in the blood, the higher the risk. Further analysis of this research indicates that out of 6000 fatal accidents/year, 180 deaths can be attributed to accidents caused by a driver under the influence of cannabis.
Hence, this survey concludes that the results of a drug test on a driver who was involved in a traffic accident should be collected and statistically processed, as is the current procedure for alcohol. Therefore, a toxicological analysis should be carried out on all drivers who are involved in a fatal traffic accident in Belgium. The toxicological accident data need to be reliable and to be collected in a uniform and anonymous way.

3.2. Practical problems

The police are faced with many practical problems in reporting offences with regard to DUID. The procedure consists of three parts. The police are in charge of the first part and second part, the test batteryand the urine test repectively. The third part consists of a blood test for which the sample is taken by an MD and analysed by an accredited laboratory.

Police and road users find this procedure **time-consuming** and **complicated**. The answers of the police reveal that 65% of the police forces need at least 90 minutes per offence. During observations of the controls, the researchers noticed that this is a realistic estimation for inexperienced police officers. However, experienced police officers are able to carry out the full procedure (including the drawing up of the police report) in 30 minutes. Efficient enforcement is impossible as too few persons can be controlled.
Participating observations have shown that many police officers are not familiar with the test battery and that the battery is often automatically followed by a urine test because the police officers realise that they have insufficient experience to correctly interpret the results. Literature studies have shown that the test battery, if carried out by properly trained, experienced police officers, offers a good indication to see whether the fitness to drive has been affected. Hence, the test battery is important because for certain substances such as cannabis, in some cases values above the minimum value are detected in urine, while the drug has no influence anymore on their fitness to drive. Moreover, some experts relativized the complexity of the test battery and attribute it to a lack of training. This was confirmed by the literature study, as it revealed that the efficiency strongly depends on the components of the test battery, the type of psychotropic substance and the experience of the police officer. During the participating observations, the researchers observed that most drivers with a positive urine test spontaneously admitted having used an illegal product. The researchers recommend therefore that no test battery would be carried out if the driver admits that he or

she has used illegal drugs. In this way, the police officers would gain time as the urine test could be carried out immediately.

It needs to be pointed out that a great deal of time is lost to call in a **doctor** (MD) to take the blood sample. During the observations, the researchers found out that it took 8 to 40 minutes before the MD arrived. To limit the waiting time, the MD should be available from the beginning of the control. Instead of receiving a fixed sum per blood sample, this MD would be paid per hour. Another proposal is done to mainly work with MDs who are recognized by the police[2]. Always working with the same MDs offers the advantage that the procedure will be carried out more quickly.

In general, the **urine test** is considered appropriate and useful. However, there are some practical problems and objections against the test in the field. This requires sanitary facilities (sanitary vehicle or transport to a building) and some police officers don't consider these "sanitary activities" as their core business. However, researchers and experts think that the urine tests should be maintained as long as there is no other test that is at least equally as reliable. An important reason is that without the urine test, there would be too many negative blood samples. The practical problems of the urine test cannot immediately be solved. The transport to a building with sanitary installations can be avoided by the purchase of an adapted (sanitary) vehicle. With the budget of the road safety fund, various police zones have already bought such a vehicle or are planning to do so. Hence, the researchers propose to maintain the urine test until a new test makes it superfluous.

A poll among the police zones revealed that only 18% of the operational police officers have had the required **training**. The law states that all operational police officers can oblige road users to take a drug test. A directive of the Minister of Justice states that only police officers who have attended a training, are competent to make people take a drug test. The directive of the Minister specifies the content of the training. However, differences have been noticed between the courses that are used in the different police schools. There should be a standardized course and more courses should be organized, so that more police officers get a uniform training.

The procedure prescribes that the police **withdraws the driving licence** for 12 hours in case of a positive urine test. In order to get back the driving licence, the driver first has to take a re-test (test battery, if the tests are still positive, a new urine test is taken). Many police zones have problems with this re-test because a police officer with the appropriate training is not always present in the police office. The problem of the re-test persists. Police schools and police zones have to make an effort to organize more courses and to increase the number of course attendants.

The procedure could be highly simplified if there would be **new**, reliable, quicker and easier-to-use tests such as saliva or sweat tests. In Australia, random roadside testing is conducted by means of saliva tests. The results show that these tests are highly efficient. By doing so, the drivers get more aware of the random roadside tests. One third of the drug users stated that the drug tests have influenced their behaviour, primarily to avoid taking drugs when they are going to drive. Hence, there is a considerable decrease in the proportion of drug users who report DUID. Other polls among drug users in England and Australia have already

[2] This MD has signed a special contract with the police. Police officers who receive medical treatment by such a MD pay the normal amount, but from the Federal Public Service of the Interior, they can re-claim the part that is normally not paid back by health insurance.

shown that random roadside testing has a deterring effect and that it is even more efficient than stricter penalties or than providing information about the risks of DUID. In Europe, the ROSITA II[3] report will soon be published. This is a study that checks which quick saliva tests deliver reliable results. At present, there are no such devices or methods that are considered sufficiently reliable. As soon as these devices or methods are available, they should be used immediately. Unfortunately, this requires a legislative adaptation that will be time-consuming as the entire legislative procedure needs to be followed. That is why this study recommends already initiating this change of legislation. Just like in the UK, the text could mention that other tests, specified by Royal Decree, can also be legally valid.

3.3. Problems with regard to the prosecution

The study of the prosecution of the reported offences shows that the different public prosecutors give different instructions to the police for **cases where alcohol is combined with drugs**. For example: some public prosecutors instruct that after a positive alcohol test, no illegal drugs should be traced, while other public prosecutors do allow this. However, a recent circular letter of the Office of the Attorney-General as well as a directive of the Minister of Justice to the police explicitly mentions that the two offences should be reported. The literature study also shows that the combined use of alcohol and drugs considerably affects the fitness to drive and that there is also a higher risk to cause or to become involved in an accident than if the substances are used separately. Belgian experts also mention the problem of masked drug use: some young drivers are well aware that the police do not oblige them to take a drug test after a positive alcohol test. That is why they use a small amount of alcohol, which results in an “alarm” indication (from 0.22 to 0.35 mg/l exhaled alveolar air). The punishment for this offence is the immediate payment of € 137.5 and a 3-hour withdrawal of the driving licence. However, this is considerably less than the penalty for drug use (fine of € 1 100 to € 11 000 and possibly a deprivation of the right to drive).
Hence, this report recommends that all public prosecutors work in a uniform way. This is a conditio sine qua non for equality of rights and legal certainty. As the combined use of alcohol and drugs increases accident risk, it seems acceptable that at the slightest suspicion of drug use, all public prosecutors should prescribe a drug test after a positive (or alarm) alcohol test.

The survey also shows that some public prosecutors immediately **withdraw** the **driving licence** in all cases, whereas others never do this. Both options can be defended. The reason not to withdraw the driving licence is that there are too many false positive urine tests, and some withdrawals would be unjustified. For the sake of road safety, the motivation would be to withdraw the driving licence. As a consequence, the police do not have to proceed to a re-test after 12 hours. The researchers recommend withdrawing the driving licence if the driver refuses to take a test or if the urine test reveals the presence of at least two psychoactive substances. This method is already being applied in some jurisdictions. On the one hand, it is quite obvious that the licence should be withdrawn if a driver refuses to take the test. On the other hand, if the presence of two substances in the urine can be shown, there is less chance that there will be a false positive result. Hence, unjust withdrawals of driving licences seem very unlikely.

There are also different points of view concerning the **transmission of the results of the blood tests to the police forces**. Some public prosecutors allow the laboratories to provide the police with a copy of the results. Other public prosecutors do not allow this because the

[3] ROadSIde Testing Assessment: for information, see www.rosita.org

law does not explicitly state that the police can receive these results. The researchers believe that it is important for the evaluation of the enforcement that the police forces have access to the results of the blood test, so that it can be checked whether the observed symptoms were properly interpreted and linked to the right drug. This background will help them to develop their experience and expertise. Hence, it is proposed that all public prosecutors allow that the results are transmitted to the police officer that made the observations.

3.4. Legislative problems

This research also reveals a number of problems with regard to legislation. If a driver has a positive alcohol test (more than 0.35 mg/l expired alveolar air) or a positive urine test for illegal drugs, the public prosecutor can give the order to **immediately withdraw** the **driving licence**. If a driver is under the influence of alcohol, drugs or medicines to the extent that he is **intoxicated or in a similar state**, the driving licence cannot immediately be withdrawn. However, it is well possible that someone has used a psychoactive substance that is not mentioned in the law and that this person hence does not test positively, but that his fitness to drive is clearly affected. It is also possible that someone is so drunk (or in a similar condition) that the tests can no longer take place. Neither is it possible to order the immediate withdrawal if a driver seems to be **medically or psychologically unfit** to drive. The researchers propose to mention “driving in a state of alcohol intoxication or a similar state” in the article that describes the offences for which the driving licence can be withdrawn. Furthermore, this article should also mention the notion of “unsafe traffic behaviour”. This kind of behaviour will have to be described as clearly as possible.

Apart from the illegal drugs mentioned in the law, there are many other products that affect the ability to drive. Certain **medicines** can influence (driving) behaviour. For example: some studies associate benzodiazepines with a higher accident risk. Often, drivers do not even realize the risk associated to the use of medicines or the combined use with other medicines or alcohol. Some countries put a special pictogram on the package of medication that can affect fitness to drive. The researchers support the idea of mentioning whether and to which extent medication affects fitness to drive. As a European study (DRUID) on this theme will soon be initiated, it seems indicated to wait for its results before taking other initiatives.

For different reasons, it is important to detect driving under the influence of alcohol and/or drugs in case of an accident. If a **test cannot immediately take place**, an intoxicated driver can claim that he used the substances after the accident. This is the case if the driver fled after having committed the offence or if the observations of the police took place with some delay. As is the case in Norway, the researchers propose to create a legal disposition that mentions that, if alcohol and/or illegal drugs are detected within a certain period (6 hours) after an accident, it is considered that these substances were used before the accident. The legal disposition needs to include that it concerns a iuris tantum.

The new law makes it possible to withdraw the driving licence for a period of 6 months and 15 days at the most. The public prosecutor imposes the first 15 days. This period can be extended by two 3 month periods. Each time, the judge has to give his consent. When a person is controlled and there are **presumptions** that he is **dependent** or that he uses psychoactive substances (presumed medical unfitness to drive), neither the public prosecutor nor the judge can impose a medical or psychiatric examination as a condition to get the driving licence back. After 6 months and 15 days, the driving licence has to be

returned without any condition. If by then, the judge has not pronounced a sentence yet, imposing alcohol or drug tests, this person, who is assumed medically unfit, can participate in traffic again. If there are presumptions of medical unfitness, the judge ought to be competent to impose a medical and/or psychological test during the period of the immediate withdrawal of the driving licence. These tests are the same as the tests for drivers who are deprived of the right to drive. As long as the person involved cannot prove that he is fit to drive, his driving licence should remain withdrawn, also after the maximum period of 6 months and 15 days, until there is a final judgement.

During the literature study, it has been noticed that the **accident risk** and the risk to cause an accident in case of **drink driving** is higher for beginning and **inexperienced** drivers. Various studies show that a lower alcohol limit decreases the number of alcohol-related accidents for young and inexperienced drivers. This however requires a more refined analysis method. The Casier-Delaunois-method, at present the only legal method to determine the blood alcohol concentration, lacks specificity. Hence there is need for a new, more sensitive and reliable, method.

Concerning fitness to drive, receiving or maintaining the driving licence is described as a partly medical matter. There are indeed certain medical standards that each (candidate) driver of a motor vehicle should meet. A (candidate) driver who is **dependent on or who abuses** psychoactive substances is not fit to drive. Each MD who observes that a (candidate) driver is not fit to drive, is obliged to inform this (candidate) driver. After being informed, the holder of the driving licence is obliged to hand in his driving licence to the competent body within four working days. The medical standards apply for all (candidate) drivers of vehicles requiring a driving licence and are an implementation of a European Directive. After a proven period of abstinence of at least six months, it is possible to be redeclared fit to drive. As this is a medical decision, it needs to be taken by an MD. The MD in charge of the fitness to drive evaluation can use each method available, including a practical driving test. These practical driving tests in particular and fitness to drive evaluations in general are carried out by CARA, a department of the Belgian Road Safety Institute, designated by the Federal Minister of Mobility. The **period of at least 6 months** of proven abstinence is a Belgian specification and is not required by the European Directive. Especially from a therapeutic point-of-view, this strict formulation is considered to be problematic. It is recommended that the 6-month-period is maintained. If on the other hand there are strong indications of an exceptionally good prognosis, this period could be reduced to 3 months.

In this context, a general problem of fitness to drive evaluation can be pointed out: because of deontological reasons, the role of the MD as **prescriber of a treatment** is incompatible with the role as **evaluator** for the driving licence. Both roles need to be strictly discerned, without overlooking the medical aspect of the decision. For a fitness-to-drive evaluation, a fitness-to-drive expert is required; this role cannot be entrusted to any general practitioner. In order to evaluate fitness to drive, an MD has to attend a specific and uniform training (recommendation). In order to reach this goal, these MDs and/or their trainings and/or their evaluations could be co-ordinated by a fitness-to-drive centre. This centre could be consulted for a medical and/or psychological examination, in order to confirm a presumption of medical unfitness to drive after a withdrawal of a driving licence, or each time that a withdrawal is prolonged.

The researchers also notice that the present terminology for the **formulation of the medical criteria** is not univocal. Therefore, it is proposed to replace the terms “addicted” and “excessive use” by medical, internationally recognized and clearly defined terminology, respectively “dependent” and “abuse”.

A second aspect considering the formulation of the medical criteria with regard to fitness to drive and psychoactive substances is the result of a **wrong translation/interpretation of the European Directive**. The directive mentions that frequent use of a psychotropic substance that can affect the fitness to drive *and* the use of this substance in such quantities that it actually has a negative effect, leads to unfitness to drive. In the Belgian formulation, both conditions are seen apart from each other (regular use *or* effective use with negative effects). This is inconvenient because of different reasons. Hence, the researchers propose to replace the “or” by “and” in the Belgian formulation.

3.5. Problems with regard to the analysis of the blood sample

During the research, some problems with regard to the blood sampling and the analysis of the sample were revealed and propositions were made. The results of the recognized laboratories reveal that two substances mentioned in the law, namely MDEA and MBDB, do not occur anymore or have become rare. Furthermore, laboratory representatives declare that the legal **minimum values** ought to be **lower**. For substances such as cannabis, this is justified by literature. A recent study reveals that the active components of cannabis can be present in parts of the brain, even if the substance cannot be detected in the blood anymore. New analysis techniques allow to detect these lower values in a reliable way. As the cut-off values and the analysis method are legally prescribed, the law needs to be changed. The researchers agree that MDEA and MBDB can be removed from the list of illegal drugs. For other substances, lower cut-off values are recommended as well: 25 µg/ml for benzoylecgonine, cocaine and amphetamines; 1.5 µg/ml for THC and 10 µg/ml for morphine. To avoid that the legislation has to be changed each time there become better analysis methods available, it is proposed to mention in the law that the scientific minimum value for each substance can be mentioned in a Royal Decree.

It is proposed to describe the analysis method as “gas or liquid chromatography with mass spectrometric detection, with addition of deuterated internal standards”.

The description of the material to be used contains a specification that the tubes that should be used for preserving the blood sample should be manufactured from “**white neutral glass**”. According to specialists, this is not required in other countries. They agree that cheaper plastic tubes will suffice equally well. Neither is it necessary to place the tubes **upright** after the blood test; this only complicates the procedure. It is recommended to remove these dispositions from the law.

For an analysis **for alcohol and illegal drugs**, it is not necessary to take two separate blood samples. **One blood sample** can suffice. Should the two analyses be necessary, the public prosecutor can always send the samples to a laboratory that is accredited to analyse for the presence of illegal drugs and alcohol.

The researchers recommend that the public prosecutors should clearly mention on the form if the driving licence of the person is withdrawn. Hence, the laboratory could analyse these

samples with priority, so that the public prosecutor can return the licence in due terms in case of a false positive urine test.

3.6. Suggestions with regard to awareness-raising, communication and further research

The legislation on drink driving and DUID seems insufficiently known among the various actors involved. This has already been shown by the aforementioned attitude measurement. Even worse is that the MDs who are summoned to take the blood sample are often unfamiliar with the procedure. That is why a new **communication campaign** is recommended. It should be targeted towards the most important target groups (the police, who have to be convinced of the danger of DUID, the medical sector and beginning drivers).

Apart from the immediate objectives of the study, the researchers finally formulate some recommendations for **further research**, based on the observed shortcomings:

In terms of enforcement, it is important to know the number of false negative test batteries and urine tests. If a driver has used an illegal substance and subsequently escapes from prosecution because the test cannot detect the substance, the subjective likelihood to get caught decreases, and the enforcement is less efficient. Comparative **research** with regard to the **reliability** of both the **test battery and the urine test** on the one hand and the **saliva and/or sweat test** on the other is therefore recommended.
Scientific research with regard to the **involvement of drivers under the influence of drugs and/or alcohol in fatal accidents** has to be made possible. If statistics show that the use of drugs (or alcohol) is an important cause of fatal accidents, the police zones can be convinced more easily to consider this phenomenon as a priority. The results of these researches should be collected anonymously to render use other than for scientific purposes impossible.
For certain target groups, Alcohol Ignition Interlocks can be an efficient alternative to the deprivation of the right to drive, e.g. for certain drivers with alcohol dependency and/or abuse. A possible **juridical implementation and the development of a Belgian alcolock program** needs to be examined.
During the research, the problem of driving and fatigue was evoked repeatedly. The problem of fatigue was not mentioned in the research assignment and is hence not discussed, but the researchers consider fatigue as a substantial problem needing further research.
The **test battery** poses some problems and the police asked for simplification. Another proposition consists of the **codification** of the tests. This would make the test battery considerably more efficient, as shown by a recent study. As the researchers did not find any standards for a simplification or a codification, supplementary research is recommended.
Furthermore, it is recommended to examine the **possibilities of secondary prevention**. The emergency services could refer the drink and/or drug drivers who were involved in an accident and put them in contact with the existing assistance network. Finally, **the results of the efforts of the police to train their personnel** should be **examined** and an **evaluation study of the measurement procedures** of the laboratories should be initiated.

The annexes can be consulted on:

- www.belspo.be
- www.bivv.be

The research report will be published by Academia Press.