DRUID: Overview of the Project Results

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Abstract

Context
The 6th RFP project DRUID aimed at supporting European transport policy makers by suggesting scientifically based recommendations to combat impaired driving.

Objectives
The main DRUID objectives were:

- in-depth analysis of the problem situation with regard to DUI/DUID in Europe
- assessment of prevalence and accident risks of DUI/DUID on the basis of epidemiological and experimental studies
- evaluation of oral fluid screening devices and cost-benefit analysis of a strengthened drug-driving enforcement
- development of a classification system for medicines
- evaluation of driver rehabilitation schemes and strategies of licence revocation
- assessment of the effectiveness of new prescribing and dispensing guidelines for medicines
- development of policy recommendations on the basis of DRUID results

Key outcomes
- Alcohol is the most prevalent substance detected in drivers (3.5%), followed by drugs (1.9%) and medicines (1.4%)
- The first priority of countermeasures should always concern alcohol impaired driving
- The highest accident risk was associated with a BAC > 0.8 g/l and a combination of alcohol and drugs
- It is recommended to set a legal BAC limit of 0.5 g/l and an equivalent THC cut off (2 ng/ml)
- Drug recognition training of police officers should be improved
- Driver rehabilitation should be an integrated part of a comprehensive countermeasure system
- Immediate sanctioning and high levels of perceived risks of detection are crucial for deterrence
- A comprehensive information system for physicians and patients is an adequate countermeasure against driving while impaired by medicines

Discussion and conclusions
All in all, the DRUID results revealed that prevalence of psychoactive substance consumption, DUI/DUID, enforcement levels and legal strategies are very heterogeneous in European countries. Nonetheless, DRUID derives general recommendations as base for national solutions.
Introduction

In 2001, the amount of 50 000 fatalities on European roads prompted the European Commission to undertake a set of measures with the overall target of reducing the amount of fatalities by 50% until 2011. The Integrated DRUID Project (DRUID, Driving under the Influence of Drugs, Alcohol and Medicines) was launched in October 2006 within the 6th Research Framework Program. DRUID aimed at getting new insights into the risky impact of psychoactive substances on road safety and developing recommendations for road safety policy makers. The project filled the existing knowledge gaps and provided a solid base to generate harmonized, EU-wide regulations to combat driving under the influence of alcohol, drugs and medicine. DRUID is the largest European research project in the domain of road safety in terms of geographic coverage (18 European countries; see Figure 1), budget (23.5 Mio. €) and number of partners (37 partners). It brought together the best European expertise in the area of road safety.

Figure 1: Geographical coverage of DRUID.

Key outcomes

Prevalence and accident risk of DUI/DUID
The prevalence of alcohol and drug use in the driving population was assessed in 13 European countries based on roadside surveys. Additionally, 6 countries conducted hospital studies to
determine the prevalence of seriously injured drivers with and without substance consumption. Table 1 shows prevalence of DUI/DUID with accident involvement (cases) and without (controls).

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Table 1: Number of cases and controls by country and substance group

The distribution of substance use in traffic is very heterogeneous in Europe, but it is obvious that alcohol is the most frequent psychoactive substance used in Europe. Besides, alcohol is often used in combination with illicit drugs (Tab. 1). In order to estimate the effect of psychoactive substance use on accident risk, the number of accident free drivers (controls) was compared with the number of serious injured drivers (cases). The calculated case-control ratio for each substance group is shown in Fig. 2 together with the prevalence of drug consumption and driving.
Fig. 2 illustrates the highest accident risk for drivers with a blood alcohol level of more than 1.2 g/l alcohol, followed by drivers who consumed a mixture of alcohol and drugs. A rather moderate accident risk appears after the consumption of Cannabis (THC) which is the most frequently consumed drug aside alcohol. The data for amphetamines has to be handled with care as the number of amphetamine positive drives was too small (Tab.1) and experimental results showed different effects (Fig.2).

**Drug-driving enforcement**

Within DRUID, 13 oral fluid test devices were evaluated by police officers in cooperation with researchers. Only three devices were evaluated positively in combination with blood tests. The results of practical evaluations demonstrated that the quality and capacities of devices with regard to specificity and sensibility have not substantially improved after completion of ROSITA II (2005). The cost-benefit analysis of enforcement strategies resulted in a conclusion that increased drug driving enforcement by means of roadside saliva screening is potentially beneficial – especially for countries with low baseline enforcement level. However, the first priority of countermeasures should always concern alcohol impaired driving.

**Classification system for medicines**

DRUID managed to establish a broad consensus in Europe concerning the categorisation of medicines that affect fitness to drive. More than 600 substances were categorised. A four-level categorisation system and a three-level risk communication system are suggested. DRUID results are compatible with all existing national categorisation and labelling systems and may easily be integrated. DRUID results are compatible with currently available PC based reference systems for physicians and could be integrated in these instruments.
Prescribing and dispensing guidelines for medicines

The adequate countermeasure to combat impaired driving is information about possible side effects. These should include recommendations on how to act and decide in order to use medicines in a safe manner concerning road traffic. Therefore a comprehensive information system for physicians, pharmacists and patients about the potential impairing effects of medicines on fitness to drive, the maximum impairment and the duration of intake after which habituation takes place, should be implemented.

Driver rehabilitation schemes

The analysis of DUI/DUID rehabilitation procedures implemented in Europe shows that no uniformity exists regarding the practice and implementation of DUI/DUID rehabilitation. DRUID supports a preventive rehabilitation concept which is compatible with the overall objective of mobility of European citizens without endangering traffic safety. Driver rehabilitation should be an integrated part of a comprehensive countermeasure system against intoxicated driving. Driver rehabilitation should be offered target group-specific; i.e. drink-drivers and drug drivers should be treated separately. DRUID recommends developing European guidelines for legally regulated rehabilitation systems and procedures.

Strategies of driving licence related sanctions

The overview of licence revocation and suspension strategies embraced 27 EU Member States, Croatia, Norway and Switzerland. Results revealed that national strategies are very heterogeneous. Anyhow, punishment certainty is the main general deterrent factor. The secondary deterrent factor is the punishment celerity: the shorter the period between offence and the imposition of the sanction, the larger are the effects on recidivism. In case of substance dependence, a punitive sanction has no deterrent effect and does not lead to a behavioural change. A model of conditional licensing is only recommendable following a sanction of full revocation.

Conclusions

The EU-DRUID project conducted a comprehensive survey concerning all aspects of driving under influence of alcohol, drugs and medicines for the first time. The findings and derived recommendations form the basis for future transport policy decisions within the European Union and individual Member States.

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