Project No. TREN-05-FP6TR-S07.61320-518404-DRUID

DRUID
Driving under the Influence of Drugs, Alcohol and Medicines

Integrated Project
1.6. Sustainable Development, Global Change and Ecosystem
1.6.2: Sustainable Surface Transport

6th Framework Programme
Deliverable 7.4.1.

Training Manual
for Physicians and Pharmacists on Medicinal drugs and Driving

Due date of deliverable: 01.10.2009
Actual submission date: 25.08.2009
Revision date: 21.09.2009

Start date of project: 15.10.2006
Duration: 48 months
Organisation name of lead contractor for this deliverable: CERTH-HIT
Revision 1.0

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	**X**
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Task 7.4: Evaluation and implementation of new technologies

Authors:

Dimitri Margaritis, Katerina Touliou (CERTH-HIT, Greece)
Silvia Ravera, Susana Monteiro, Han de Gier (RUGPha, the Netherlands)
Sofie Boets, Uta Meesmann (IBSR-BIVV, Belgium)
Javier Alvarez (UVa, University of Valladolid, Spain)

Partners:

Silvia Ravera, Susana Monteiro, Han de Gier, (RUGPha, University of Groningen, the Netherlands)

Martina Albrecht, Michael Heiβing (BASt, Bundesanstalt für Straßenwesen, Germany)

Kristof Pil , Alain Verstraete, Trudy van der Linden (UGent, Ghent University, Belgium)

Inmaculada Fierro, Trinidad Gómez-Talegón, M. Carmen Del Río, F. Javier Alvarez (UVa, University of Valladolid, Spain)

Michel Mallaret, Charles Mercier-Guyon, Isabelle Mercier-Guyon (UGren, University of Grenoble, Centre Régional de Pharmacovigilance, France)

Uta Meesmann, Sofie Boets, Mark Tant (IBSR-BIVV, Belgian Road Safety Institute, Belgium)

Wolfram Hell (LMU, Ludwig-Maximilians-Universität München, Institute for Forensic Medicine, Germany)

Task 7.4 Leader: Dimitri Margaritis, Katerina Touliou (CERTH-HIT, Greece)

Work Package Leader: Han de Gier (RUGPha, the Netherlands)

Project Co-ordinator: Horst Schulze (BASt, Germany)

Project Funded by the European Commission under the Transport RTD Programme of the 6th Framework Program

Acknowledgements

The work that has been presented in this Training Manual is partly based on the Dutch FTO Module, developed by DGV, the Dutch Institute for Rational Use of Medicine. The FTO Module is a training course manual developed for organizing a joint meeting for general practitioners (GPs) and community pharmacists who would like to have a better knowledge on the influence of medicinal drugs on road safety and on the LESA, a National Joint Agreement among pharmacy and physicians organizations "Medicines and Traffic Safety" (2008). The LESA document gives recommendations on exchanging information between physicians and pharmacists when prescribing and dispensing medicinal drugs that affect driving abilities. These documents were provided to health care professionals at the start of a Dutch campaign "Medicinal drugs and driving" in October 2008.

Content

List of Figures

List of Tables

List of Abbreviations

Abbreviation	Full description
ATC	Anatomical Therapeutic Chemical classification system for medicines (WHO)
BASt	Bundesanstalt für Straßenwesen
BZ	Benzodiazepine
CBR	Centraal Bureau Rijvaardigheidsbewijzen
CI	Contra Indication traffic participation
D	Deliverable
DGT	Dirección General de Tráfico
DGV	Dutch Institute for Rational Use of Medicine
DRUID	Driving under the influence of Drugs, Alcohol and Medicines
EMEA	European Medicines Agency
EUB	Eerste Uitgifte Begeleiding = First Dispensing Guidance
EUC	Eerste Uitgifte Controle = First Dispensing Control
FTO	Local pharmacotherapy review groups of community pharmacists and GPs (in The Netherlands)
GIT	Geneesmiddel Informatie Tekst = Medicine Information Text
GP	General Practitioner
ICADTS	International Council on Alcohol, Drugs and Traffic Safety
ICT	Information & Communication Technology
LESA	National agreement among pharmacy and physicians organizations (in The Netherlands)
NHG	Dutch College of General Practitioners

PIL	Package Information Leaflet
RMS	Register Medication Surveillance
SmPC	Summary of Product Characteristics
T	Task
TUB	Tweede Uitgifte Begeleidingssignaal = Second Dispensing Guidance
WHO	World Health Organisation
WP	Work Package

Executive Summary

Deliverable 7.4.1 (D7.4.1), or the so called “Training Manual”, is part of the evaluation studies (D7.4.2) in DRUID Task 7.4 (T7.4) focussing on physicians’ and pharmacists’ implementation of practice guidelines and protocols for prescribing and dispensing medicines affecting driving performance, after being trained on them.

Within the T7.4 research design (D7.4.2), a training course is planned in which groups of physicians and pharmacists in three countries (Belgium, the Netherlands and Spain) are provided with guidelines for prescribing and dispensing medicines and for informing patients, and trained on the use of supporting decision tools for daily use. This training course is the preparatory phase for implementation of the guidelines and tools.

The Training Manual gives a general overview of the relevant parts in the training course and forms the base for the country-specific Training Manuals including the national, study-specific, context and content.

After the introduction and scoping of the Training Manual and course in **Chapter 1**, **Chapter 2** continues with the outlines of the training course: the background (section 2.1), objectives (section 2.2) and proposed structure (section 2.3).

Chapter 3 includes the core information to be shared during the training course. First (section 3.1), the DRUID WP4 proposal for a European categorization system for medicines affecting driving performance is introduced. The second substantial part (section 3.2) focuses in-depth on existing international guidelines for prescribing and dispensing safe medicinal treatment. At this point, specific attention is also given to issues related to assessing fitness to drive by health care professionals, and to the importance of documenting the decision making process when working with patients at risk of litigation.

Fact sheets including all relevant information about the side effects and characteristics of individual psychotropic medicines, are another core product of WP4, and are introduced in the third section (section 3.3). All fact sheets will be made available in the decision support tools.

The last section (section 3.4) emphasises the importance of providing relevant information to various target groups (physicians, pharmacists, general public, drivers as patients and the younger public), referring to the use of prototype information and dissemination documents as developed in T7.3 (Appendix A1.).

Chapter 4 gives an overview of the various decision support ICT and non ICT tools [integrated software (section 4.1), stand alone website (section 4.2), CD-Rom and book (section 4.3)] that have been developed and/or integrated, for assisting physicians and pharmacists in their daily prescribing and dispensing processes during the T7.4 evaluation studies in Belgium, the Netherlands and Spain. These tools are study-site specific and will be described in more detail in the country-specific Training Manuals.

The **Appendix** presents the prototype information brochures for different target groups as developed in T7.3 (A1). Furthermore, supporting means for increasing the effectiveness of the training process and for later implementation, based on prior experiences in the Netherlands, are presented: an example of a DRUID fact sheet (A2), the knowledge test (A3), case studies (A4) and an example of ‘joint agreements’ between physicians and pharmacists (A5). It is proposed to include at least the first two in the training course, as the obtained opinions can be used in the discussions during the training course. Finally, a draft version of the questionnaire for health care professionals (A6) as baseline measurement in the T7.4 evaluation study is presented. This questionnaire will be filled out by the training course participants before the training starts. It aims at gathering information on baseline knowledge, opinions and attitudes of the participating health care workers, and will allow evaluating changes at the end of the T7.4 studies.

1. Introduction

D7.4.1 is part of DRUID WP7 Task 7.4 (T7.4) "Evaluation and implementation of new technologies". The DRUID Technical Annex specifies T7.4 as follows (p. 111):

The implementation of practice guidelines and protocols for medical and pharmaceutical care will be investigated after training a group of GPs, medical specialists and community pharmacists in the Netherlands, Belgium, Spain, and Germany with and without the application of new technologies such as computerised protocols in daily practice. Collaboration with researchers in those countries can provide insight in differences depending upon existing conditions with respect to the application of ICT and working relationships of the different professionals in these countries. The outcomes of Task 7.3 „Booklets" will offer opportunities to evaluate the effectiveness of risk communication to patients and drug consumers regarding psychoactive substances affecting driving performance by using the categorisation system developed in Task 4.2 "Consensus". By investigating the patient satisfaction in all practices the outcomes of the implementation can be further defined. Tasks 7.2 "Guidelines" and 7.3 "Booklets" serve as input for Task 7.4.

D7.4.1 is the Training Manual for physicians and pharmacists on medicinal drugs and driving as part of the T7.4 evaluation studies that will take place in the Netherlands, Belgium and Spain. Aim of these studies is the evaluation of the implementation of the DRUID developed and proposed practice guidelines and protocols for prescribing and dispensing medicines affecting driving performance (detailed description of the specific study designs follows in D7.4.2).

The original proposal was to conduct the evaluation studies in the Netherlands, Belgium, Spain and Germany, but the WP7 team decided that Germany would focus on the evaluation of the effectiveness of risk communication to drug consumers (i.e. second T7.4 objective in the Technical Annex). It was considered that the evaluation of the effectiveness of risk communication to patients can be combined with the evaluation of the practice guidelines (first T7.4 objective in the Technical Annex) while the risk communication to drug users requires another approach. This way the efforts of the participating countries are split in a cost-efficient way between: 1) the investigation of the practice guidelines for physicians, pharmacists and patients (Belgium, the Netherlands, Spain), on the one hand, and 2) the evaluation of the effectiveness of communicating DRUID results to drug consumers and young drivers (Germany), on the other hand. It was considered that there would be no significant additional gain in knowledge if the same types of studies would be conducted simultaneously in the four countries as initially planned. T7.4 partners accepted a proposal from BASt (Germany) to shift efforts and resources within this task. They propose to conduct expert hearings and an evaluation study for risk communication of DRUID outcomes to drug consumers and younger drivers. The study will be conducted during the last year of DRUID in order to include as many of the results and input from other DRUID work packages as possible. The outcome of this study will be presented in a separate report.

The work reported in D7.4.1 is aimed at physicians and pharmacists who are trained on and familiarized with the DRUID proposed categorization system for medicinal effects on driving (DRUID D4.2.1), prescribing and dispensing practice guidelines and possible information documents for patients (outcomes of Tasks 7.2 and 7.3); and who are prepared for the implementation of prescribing and dispensing decision support ICT tools, in the scope of a training course as first part of the T7.4 evaluation study.

D7.4.1, or the Training Manual, addresses the general background and structure of the training course and the DRUID proposed common content – in which some (marked) parts should be country-specifically filled in – and material for the course, and gives an overview of the decision support tools that are used in the different national evaluation studies.

Training course

Based on this Training Manual, it is suggested to have a training course duration of 5 hours (breaks not included), but this might differ between the participating countries in the evaluation studies. If needed, additional meetings or assignments to participants can be organized in order to support the

preparatory activities for the course; and if more substantive supporting information is needed, reference is made to the literature reported in the Reference list.

Organisers of the training course are suggested to:

- Prepare the meeting several weeks in advance (if possible physicians and pharmacists together). Have a look at the programme and the procedure of the meeting, and make arrangements concerning the allocation of tasks during the meeting.
- Use the PowerPoint presentation prepared for this meeting to be obtained by downloading from the website of DRUID or by using the CD-Rom.
- Examine the materials carefully (provided in this Training Manual and on the CD-Rom). Annexes A1, A2, A3, A4 and the bibliography can provide you with starting points.

This section can be used to give additional references to national websites or other sources allowing the course moderators to be better prepared.

Important NOTE before using the information in your country

Please note that this manual might contain sections and specific information that do not apply to the medical and pharmaceutical practices in your country. The information can be adjusted to the needs of the practitioners in your country. In particular the legal responsibilities of some health care providers, for example pharmacists, to inform the patient can differ from country to country, as well as the examples of the medicines mentioned in the tables and the text, they could not be available in your country. Although these differences exist it is expected that most recommendations are valuable for developing your practice, and that this Training Manual will serve the purpose of supporting the application of new information in consulting patients on the impairing effects of medicines on their driving performance.

Disclaimer: Although the information presented below has been gathered and evaluated with great care, DRUID will not accept any liability after use of the information by patients taking the medicines listed.

Note: The application of the DRUID medicines list without reading this background information will limit the use of the various advises provided to physicians and pharmacists. Therefore it is strongly recommended to read the full document before using the DRUID list.

2. Training course: background, objectives and structure

2.1. Background information

Because of their side effects, some medicines can have a negative impact on the fitness to drive and, hence, on driving skills. Despite the risks, it often happens that persons who use these medicines participate in traffic.

Medicines which affect the fitness to drive are provided with a package information leaflet (PIL) for the patient showing a warning message. In general this message informs the patient that the medicine may affect the fitness to drive. This warning mostly applies to the therapeutic group the medicine belongs to. However, within such a group, medicines might differ in their potential to influence the fitness to drive and driving skills. Moreover, this warning does not consider other factors like the indication, dosage and treatment duration (e.g. number of hours after having taken a sleeping pill). The information on the label and in the package information leaflet usually does not provide distinctive, proper advice to the user on his/her participation in traffic. For this reason, experts within the European DRUID Project have proposed a European categorization system (DRUID D4.2.1). They agreed on 4 categories to inform health care providers and patients on the medicine's impairing effects on driving. Chapter 3.1 gives a description of the categories.

2.2. Objectives

After attending the training course participants will:

- understand the use of the categorization system for medicinal drugs that might impair driving performance;
- know the recommendations on dispensing information when prescribing and delivering medicines that might influence driving skills, as these are described in the prescribing and dispensing guidelines;
- have insight in their own policy with regard to medicines that might impair driving performance;
- be able to make joint agreements on patient information policies and allocation of tasks between GP's practice and community pharmacy with respect to those medicines that might impair driving skills (this objective is only applicable if a joint statement exists within the respective countries; an example of joint agreements is found in Appendix A4).

2.3. Proposed training course scheme

The proposed scheme for the training course has been developed with the assumption that physicians and pharmacists will be able to attend a training course with the duration of about 5 hours. Based on the experiences with training courses for health care practitioners in the different countries it can be decided to adjust the duration (length of the course, sessions) of the training course, or to conduct the two parts at different occasions.

Part 1 General Introduction

10 minutes – Welcome
20 minutes – Baseline measurement by questionnaire[1] (see Appendix A5)
15 minutes – Introduction and purpose (i.e. Chapter 1 and 2)
20 minutes – Prescribing and dispensing guidelines (i.e. Chapter 3)
15 minutes – Knowledge test (see Appendix A3)
15 minutes – Break

[1] This is part of the T7.4 evaluation study design: more details in D7.4.2.

40 minutes – Case study (see Appendix A4)
15 minutes – Agreements (see Appendix A5)

Part 2 Implementation of the (country-specific) evaluation study protocol

15 minutes – Introduction
30 minutes – Study design and protocol (country-specific)
30 minutes – Decision support tool(s) (Chapter 4)
15 minutes – Break
40 minutes – Get started

3. Training course: content and materials (common)

3.1. A European categorization system

The experts from Drug Regulatory Agencies in Europe and within the DRUID Consortium agreed on 4 categories to inform the patient and the health care providers on the medicine's impairing effects on driving. These are derived from the revised version of the SmPC (Summary of Product Characteristics), as proposed to EMEA in March 2008 during the consultation phase for the guideline on the SmPC.

Based on these 4 categories information for physicians and pharmacists can be derived. In order to be more patient friendly though the experts suggest more informative warning levels (see Table 1).

Warning levels to inform patients can be developed based on the 4 categories. It is emphasized that the warning can be based on warning symbols or pictograms, but that a description or explanation in writing or printing should always be an integral part of the warning symbol.

The following scheme (Table 1) can be considered as the proposal for a European categorization system, based on the conclusions of the experts from Drug Regulatory Agencies and DRUID partners:

Table 1: DRUID Categorization system.

Information for physicians and pharmacists		**Warning for patients** (with warning symbols and standard descriptions per country)
Description of categories with levels of impairment	**Information on how to advise their patients**	
Category 0 Presumed to be safe or unlikely to produce an effect on fitness to drive.	Confirm that the medicine will be safe for driving, provided that combinations with alcohol and other psychotropic medicines are excluded.	[no warning needed]
Category 1 Likely to produce minor adverse effects on fitness to drive.	Inform the patient that impairing side effects may occur especially during the first days and that have a negative influence on his/her driving ability. Give the patient the advice not to drive if these side effects occur.	**Warning level 1** Do not drive without having read the relevant section on driving impairment in the package insert.
Category 2 Likely to produce moderate adverse effect on fitness to drive.	Inform the patient about the possible impairing side effects and the negative influence on his/her driving ability. Advise the patient not to drive during the first few days of the treatment. If possible prescribe a safer medicine, if acceptable by the patient.	**Warning level 2** Do not drive without advice of a health care professional. Read the relevant sections on driving impairment in the package insert before consulting the physician or pharmacist

Category 3 Likely to produce severe effects on fitness to drive or presumed to be potentially dangerous.	Inform the patient about the possible impairing side effects and the negative influence on his/her driving ability. Urgently advise the patient not to drive. Consider prescribing a safer medicine, if acceptable by the patient.	**Warning level 3** Do not drive. Seek medical advice after a period of treatment about the conditions to restart driving again.

* The assigned categories relate to the acute or first time use of the medicine (at the start of treatment)

3.2. Prescribing and dispensing guidelines

Prescribing and dispensing guidelines for medicinal drugs affecting driving performance are hard to find in the medical and pharmaceutical literature. The most cited document has been published by the International Council on Alcohol, Drugs and Traffic Safety (ICADTS). Experts from all over the world have described how to select the safest medication for patients who drive. In this section major parts of the ICADTS report have been used to develop DRUID guidelines that will support physicians and pharmacists in their daily practice.

After the publication of the report of the ICADTS Working Group on Prescribing and Dispensing Guidelines for Medicinal Drugs affecting Driving Performance in 2001 (see www.icadts.org), it was discussed that a list with medicinal drugs categorized according to their impairing properties was needed. The practical use of the guidelines would benefit from the availability of such a list, because it would allow the prescribing physician and dispensing pharmacist to look for safer alternatives within one specific therapeutic class.

Ever since the development of a list according to the impairing properties of medicinal drugs in 1991 (Wolschrijn et al.), three European countries introduced their national list based on the original proposal by Wolschrijn et al. Belgium was the first to publish an updated list in 1999, Spain followed in 2002, and France recently in 2005 introduced a more extensive list. The DRUID list is based on the developments in those countries (D4.3.1).

In this section general advices for prescribing safe medicinal treatment for drivers and for applying the categories will be provided, together with some guidelines for a systematic approach of selecting the appropriate medication for an individual patient who wants to participate in road traffic.

3.2.1. More attention given by health care providers

Within DRUID prescribing and dispensing guidelines have been developed. In these guidelines health care professionals are advised to provide patients with clear information allowing them to make their own judgements and to decide whether it is safe for them to drive. This is especially important for those who are advised to use a category 2 (likely to produce moderate adverse effect on fitness to drive) or category 3 medicine (likely to produce severe effects on fitness to drive). It was suggested that prescribing physicians should always address the individual circumstances and needs of the patient. Pharmacists are in general able to explain the medicinal effects in relation to the medicine's pharmacodynamics and pharmacokinetics and will be able to assist patients in taking their medication appropriately (also focusing on compliance issues).

Any advice to the patient would ideally be the result of an evaluation of these needs and the medical condition that will be affected by medication in a positive way, whereas at the same time negative adverse effects on driving might occur. However, the medical condition of the patient may present its own risks on fitness to drive which should also be taken into account.

It is obvious that when patients are advised to read the relevant sections in the package insert (with or without a warning on the package to do so), health care providers need to be prepared to answer questions about the text written in the leaflets. At this moment the section in the leaflet of psychotropic

medicines is not always clear about the impairing effects and how to react to these with respect to driving. In many cases the package information leaflet instructs a patient-driver to observe the impairing side effects, which is difficult for most patients. Therefore it is emphasized by the experts and DRUID partners to make a distinction in proposing the European categorization system:

1. In considering the ***present*** situation, any advice provided to the patient on the label to read the package leaflet before driving will result in raising more questions than obtaining answers on how to react. This is because the information obtained from the leaflet concerning effect on fitness to drive is highly variable in quality and clarity. Therefore physicians and pharmacists are advised to explain the problem before patients are confronted with them.

2. In considering the ***future*** situation, where leaflets are derived from a SmPC with clear explanations on the category (if the revision of section 4.7 of the SmPC guideline will be accepted according to the proposals), advice to read a package leaflet will result in more consistent dissemination of information and a better opportunity for patients to make the right decision on their fitness to drive or operate machinery.

Finally it was emphasized to include in new prescribing and dispensing guidelines, that consultations with patients whose fitness to drive may be affected, need special attention. Emphasis should also be made to share and document decision making (see section 3.2.4).

3.2.2. Five steps for prescribing safe medicinal treatment to drivers

Providing adequate information concerning medicines and driving is one of the priorities. Thus, one of the recommendations of the European Union's medicines, drugs and alcohol group has been "to develop common guidelines about the information given to patients by practitioners and pharmacists" (Directorate General for Energy and Transport, 2002).
In this sense, one of the activities in the field of medicinal drugs and driving to which special attention has been given in DRUID is to promote the rational prescription of medicines to patients who are drivers. To facilitate adequate prescriptions for drivers the following 5 steps should be followed (Figure 1). Although the said principles are aimed at physicians, they can and should also be applied to other health professionals such as pharmacists and nurses (Alvarez, 2006).

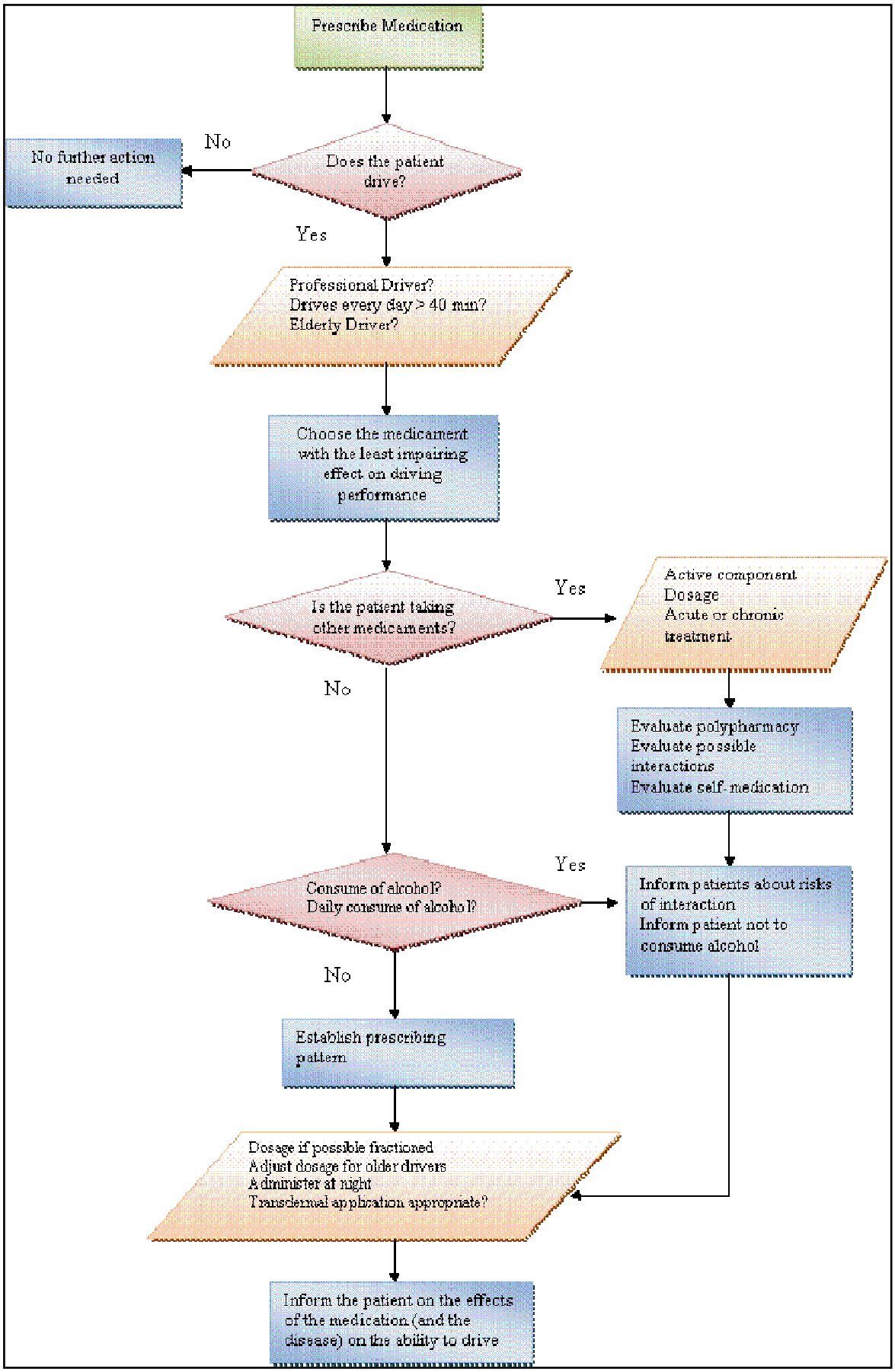


Figure 1: Prescription of medicines to patients who drive a vehicle

Step 1: An adequate clinical history. Is the patient a driver?

Physicians should ask their patients about the kind of activities they perform during their daily life, paying special attention to those that require the patient to be alert with a high psychomotor performance due to the possible serious consequences that may occur (accidents), including whether the patient habitually drives and in what conditions. As most of the adult population has a driving licence and doctors generally have little time at their disposal to interview patients, special attention should be given to those groups that i) are professional drivers, ii) drive practically every day for at least 40-45 minutes and iii) elderly persons who (frequently) drive.

Step 2: Select the medicine which has the least effect on psychomotor performance.

All drivers, even all patients, should be asked whether they are taking medicines or following some treatment: which medicines they are taking, dosage and duration of the treatment. Nevertheless, the key point is how to select the medicament which has the least effect on psychomotor performance.
Once an adequate diagnosis has been reached, and when a pharmacological treatment must be undertaken, whenever possible, the medicament which least affects the fitness to drive should be chosen. The different therapeutic alternatives should always be taken into consideration. The categorization of medicines in agreement with their effect on fitness to drive could be most useful at the time of selecting the medicament to prescribe. Reference can also be made to scientific research and reviews to evaluate a medicament's effect on fitness to drive (Riedel et al.,1998).

Step 3: Assess the factors that influence the effect a medicine can have on fitness to drive.

When prescribing a medicament for a driver, besides choosing the one that least affects psychomotor performance, it should also take into account other factors related to the medication and health habits that may influence the medicament's final effect on fitness to drive. These are: i) the appearance of adverse effects, ii) the joint prescription of several medicines, iii) self-medication, and iv) the joint consumption with alcohol and its possible interactions.

Step 4: Choose the most adequate prescribing pattern.

The possibility of using the prescription pattern that produces the least adverse effects on fitness to drive should be considered. The use of nocturnal dosage, dosage broken up over 24 hours, or the use of topical preparations (nasal) instead of oral medication, which may diminish the adverse effects on fitness to drive (e.g. a sedative effect). Special attention should also be paid to dosage in certain patient group (e.g. elderly patients), as some effects can be increased if the recommended dosage is surpassed.

Step 5: Inform patients and their families.

It is a basic principle that patients should be informed (Table 2) of the effects that the illness and the medicine can have on his/her fitness to drive with the aim of minimising risk.

Furthermore, patients and their families should also be informed of the signs to look out for when fitness to drive is impaired (Table 3). A case for particular attention is that of elderly people. In general, the fact that an elderly person drives is taken as a positive sign, as it helps to maintain them socially integrated. The question is: When should they refrain from driving? In many cases, it is often their family who notice the signs of impaired fitness to drive and inform the doctor who can recommend that the patient does not drive.

Table 2: Recommendations to the patient concerning the influence of medicines on fitness to drive

Certain medicines can affect your mental alertness and/or co-ordination and can therefore affect driving skills. This medicine might also be one of them. The organism's 'reaction' to medicines is more apparent during the first few days of the treatment, especially several hours after taking the medication. Medication and alcohol together can greatly increase the adverse effects on fitness to drive.
Always follow the physician's and pharmacist's instructions on how to use the medicine: at the time and with the dosage indicated.

Never use medicines that are prescribed for others. What is good for one person may cause problems to another.
If you have to drive frequently, tell your physician. He/she will try to find the medication which interferes least with your fitness to drive.

Table 3: Signs of impaired driving performance

Blurred or double vision; difficulty concentrating or remaining alert
Surprise at normal occurrences while driving (e.g. breaking hard at a stop sign, or traffic light seen at the last moment)
Difficulty in remembering how the destination was reached
Difficulty in driving straight
Frequently driving in the wrong line or in the middle of the road

3.2.3. General advices for applying the categories and warning levels

If possible choose a medicine in category 1 (likely to produce minor adverse effects on fitness to drive) or a medicine that has no effect on driving performance related skills. This is even more important if the patient uses his car (or other motorized vehicle) more frequently (e.g. professional drivers).

An important limitation of a list of medicines based on categories is the lack of information in the categories on the various dosages that are used for the different medicinal drugs. As a general rule the categories are assigned to the medicine in the normal therapeutic dosage given to an adult person for the main indication of the medicine at the start of treatment. If higher dosages are taken one should consider the warning level to be categorized as being one level higher if not yet assigned to the highest warning level (see Table 1).

Circumstances that can also determine the influence on the fitness to drive like starting or stopping a medication, adjusting the dose or time of use during the day should be taken into account. In those circumstances one should consider the warning level (1-3) that meets the requirements for warning the patient (see Table 1).

Although the DRUID list can support the physician and pharmacists in selecting the safest alternatives within each therapeutic class, if available, specific attention should be given to general prescribing and dispensing guidelines, based on the ICADTS report in 2001 (Table 4).

Table 4: General prescribing and dispensing guidelines

Prescribing Guidelines	**Dispensing Guidelines**
1. Realize that the use of some psychoactive medicines has been associated with an increased risk of causing an injurious accident and that patients should receive this information.	1. Discuss with prescribing physicians what patient information (written and oral) should be provided at the first delivery of a particular impairing medicine
2. Consider an alternative in the light of experimental research showing large differences between the effects on driving performance of various medicines within the same therapeutic class.	2. Inform the prescribing physician that alternative drugs exist in case a medicine in class II or III has been prescribed, and inform the patient.
3. Start with the lowest doses of psychoactive medical medicines and whenever possible avoid multiple dosing over the day.	3. Advise the physician to prescribe the lowest effective dose of a particular psychoactive medicine and to avoid multiple dosing over the day. Inform the patient.
4. Do not reflexively "double the dose" if patients fail to respond to psychoactive medication.	4. Advise the physician to try another medicine if the patient reports a lack of efficacy after beginning of treatment and inform the patient. If higher doses are needed advise the patient to use the largest part before sleep (if compatible with the therapeutic regimen).
5. Avoid prescribing different psychoactive medicines in combination.	5. Explain to the patient that poly-therapy with psychoactive medicines is always an experiment

	with the patient's safety and avoid to driving if treatment can not be adjusted.
6. Do not rely solely upon the manufacturers' advice for counselling patients about the effects of medicine upon driving.	6. Explain to the patient why warnings provided by the manufacturer about their medicine's effects on driving are vague, illogical and sometimes misleading.
7. Advise patients concerning the ways they can minimize the risk of causing a traffic accident if it is impossible to avoid prescribing an obviously impairing medicine or one with unknown impairing potential (see next Table).	7. Advise the patient the ways they can minimize the risk of causing a traffic accident if they have to use a drug with an impairing potential (see next Table).
8. Monitor the patient's driving experience with the drug.	8. Monitor the patient's driving experience with the drug (e.g. at the first refill) and report back to the physician or ask the patient to inform the physician.

In some countries, like the Netherlands, GPs and community pharmacists have regular meetings to discuss the first choice medications for various indications and complaints based on therapeutic considerations. The discussions on the categorization system and the guidelines in such a meeting will offer opportunities to provide patients with the same information and instructions if driving impairing medication will be prescribed and dispensed.

In preparing changes in prescribing and dispensing practices it might be useful to focus on medicinal drugs that have been studied extensively in laboratory and over-the-road tests. The ICADTS Working Group reviewed the literature and decided that for some medicines in the most frequently used therapeutic classes of psychotropic medicines, safer alternatives could be presented, with risk factors to keep in mind when prescribing and dispensing these medicines.

For some frequently used medicine classes more specific information can be provided to guide the physician and pharmacist in prescribing and dispensing these psychotropic medicines (Table 5). These are just given as examples (source: ICADTS Working Group report, 2001).

Table 5: Prescribing and dispensing information for some frequently used therapeutic classes of psychotropic medicines

Therapeutic class	Medicines with little or no impairment	Risk factors	Prescribing information	Dispensing Information
Anti-histamines	Ebastine 20 mg OD Fexofenadine 60 mg b.d.s. or 120 mg/180 mg OD Loratidine 10 mg OD	Liver and/or renal dysfunction		1. Avoid alcohol while taking this medicine If medicines with little or no impairment can NOT be prescribed and/or at the beginning of treatment (also with least impairing one) focus on: 2. Recognize signs of impaired driving performance (stop for rest if any occur): • Blurred vision • Difficulty in concentrating or staying awake • Unusual surprise by ordinary traffic events • Not being able to remember how exactly you came at destination • Difficulty in holding steady course in traffic lane
Anti-depressants	Citalopram 10.mg Descitalopram 10.mg Fluoxetine 20 mg OD Moclobemide 200 mg b.d.s. Paroxetine 20 mg OD Sertraline 50mg	No specific risk factors known	Avoid combined use of fluoxetine and nonselective MAOIs, tryptophan, selegiline, terfenadine (adverse drug interactions) Avoid combined use of moclobemide and dextromethorphan, (tricyclic) antidepressants, (pseudo)ephedrine (adverse drug interactions) Avoid combined use of paroxetine and nonselective MAOIs, (dex)fenfluramine and selegiline (adverse drug interactions)	1 Avoid alcohol while taking this medicine. If medicines with little or no impairment can NOT be prescribed and/or at the beginning of treatment (also with least impairing one) focus on: 2 Recognize signs of impaired driving performance (stop for rest if any occur): • Blurred vision • Difficulty in concentrating or staying awake • Unusual surprise by ordinary traffic events • Not being able to remember how exactly you came at destination • Difficulty in holding steady course in traffic lane
	Venlafaxine 75-150 mg q.d. (an SNRI effective in more than 80% of patients with generalized anxiety disorders	No specific risk factors known	Avoid combined use of venlafaxine and nonselective MAOIs (adverse drug interactions)	

Note: The sequence in which the safer alternatives are mentioned is based on alphabetic order and do not express any therapeutic preferences

Therapeutic class	Medicines with little or no impairment	Risk factors	Prescribing information	Dispensing Information
Hypnotics	> 10 h post dosing; taken at night: Lormetazepam 1 mg Temazepam 10 mg Zolpidem 10 mg	Combination with other psychoactive drugs Liver and/or renal dysfunction (elderly patients: half the normal dose)	Avoid prescribing for longer than 2-4 weeks	1. Avoid alcohol while taking this medicine If medicines with little or no impairment can NOT be prescribed and/or at the beginning of treatment (also with least impairing one) focus on: 2. Recognize signs of impaired driving performance (stop for rest if any occur): • Blurred vision • Difficulty in concentrating or staying awake • Unusual surprise by ordinary traffic events • Not being able to remember how exactly you came at destination • Difficulty in holding steady course in traffic lane 3 Avoid taking longer than 2-4 weeks and more than one at night
Tranquillizers	Buspirone 10 mg b.d.s.	No specific risk factors known	Avoid combination with selective serotonin reuptake inhibitors (SSRIs) because of reduced therapeutic effect Consider combination for 1 week with oxazepam 10 mg t.d.s. if therapeutic response seems to be inadequate (forbid driving during the first week)	1. Avoid alcohol while taking this medicine If medicines with little or no impairment can NOT be prescribed and/or at the beginning of treatment (also with least impairing one) focus on: 2. Recognize signs of impaired driving performance (stop for rest if any occur): • Blurred vision • Difficulty in concentrating or staying awake • Unusual surprise by ordinary traffic events • Not being able to remember how exactly you came at destination • Difficulty in holding steady course in traffic lane
	SSRI's are effective in more than 60% of patients with generalized anxiety disorders : Fluoxetine 20 mg OD Paroxetine 20 mg OD	No specific risk factors known	Avoid combined use of fluoxetine and nonselective MAOIs, tryptophan, selegiline, terfenadine (adverse drug interactions) Avoid combined use of paroxetine and nonselective MAOIs, (dex)fenfluramine and selegiline (adverse drug interactions)	
	Venlafaxine 75-150 mg q.d. (an SNRI effective in more than 80% of patients with generalized anxiety disorders	No specific risk factors known	Avoid combined use of venlafaxine and nonselective MAOIs (adverse drug interactions)	

Note: The sequence in which the safer alternatives are mentioned is based on alphabetic order and do not express any therapeutic preferences

3.2.4. Assessing fitness to drive by the health care professional

Any prescription for a patient will be the result of considering clinical needs and the risk-benefit ratio of treatment. In case psychotropic medicines are prescribed some extra attention is needed. Especially in case medicines in categories 2 and 3 are prescribed, discussions with patients can complicate the decision-making process if they indicate a need to drive. The assessment of the patient's fitness to drive is an assessment in which the risk of the medication should be weighed carefully against the benefit of treatment. Patients need to be informed about uncertainties and responsibilities of both the healthcare provider and the patient. In general there are two important ways to deal with these complications.

First, explain to the patient that it will be his or her own decision whether or not to drive a car if impairing medication will be used. The only way to decide what to do is by discussing the available information on the risk of the medication and worries of the patient who participates in traffic, to assure that the patient is willing to change behaviour if needed and to assess the individual risk based on uncertainties regarding these issues.

It is also important for patients receiving chronic or long term prescription to check their fitness to drive regarding to the pathology (e.g. diabetes, epilepsy, or substitution treatments in addiction). For some pathologies, a medical examination is required by the driving licence authority. The prescription of medicinal treatments in such pathologies needs specific attention to inform the patient. Another reason for specific and more complete information is professional driving especially in trucks and buses or night driving. Cooperation with the occupational medicine service can be crucial for an adaptation of the work task.

It is important to provide both verbal and written information about the influence of a medicine on a patient's fitness to drive. In the brochures for physicians and pharmacists and for patients (see Appendix A1.1 to A1.4) several advices will be provided for patient counselling. When doing so you must consider at least the following:

- Advise not to combine psychotropic medication with the use of alcohol or other medicines that might affect the central nervous system, because this may increase the effect on the patient's reaction performance.

- Check whether the patient is willing to follow the treatment plan and if he/she thinks he/she is able to, discuss alternative treatments with the patient, if available.

- Advise the patient to be aware of possible side effects, such as drowsiness, dizziness or sleepiness in particular during the first period of treatment (1-2 weeks). If these side effects occur the patient should not drive.

- Advise the patient to report on these side effects during a follow up visit after the first 2 weeks of treatment. Based on the outcomes of the assessment, after this visit or any follow-up visit, driving might be possible. In that case specific instructions (see above) remain valid.

The second important issue to consider is documenting the decision-making process in case the physician is working with patients at risk for litigation (Table 6). This is specifically related to responsibilities at the level of the physicians and possible penal proceedings in the event of accidents occurring after a positive decision from their side that driving is possible in a responsible manner. They can manage that risk by documenting not only what was done in assessing fitness to drive and instructing the patient, but also the assessment of the patient's decision-making competence, patient's understanding of impairing properties of the medicine. And finally documenting the careful weighing by physician and patient of the risks and benefits of alternative courses of action to achieve fitness to drive, for example a change in medication by selecting less impairing medicines and / or discussing instructions how to take the medicine in the most appropriate way in order to avoid the possible impairing effect. It seems a lot of extra work, but it is worth documenting the decisions where driving is considered to be possible under strict rules. In most countries legal provisions instruct doctors to document their decisions in a patient record, therefore no new rules need to be developed. It is more about awareness and discipline. The decision whether or not to drive remains at the patient who is well advised.

Table 6: Checklist with issues for documenting the decision-making process

Actions to be checked during the consultation: 1. Advise not to combine psychotropic medication 2. Check whether the patient is willing and able to follow the treatment plan 3. Advise the patient to be aware of possible side effects 4. Advise the patient to report on these side effects during a follow up visit Documentation of the following items: 1. Tests done and / or information gathered in assessing fitness to drive 2. Assessment of patient's decision-making competence based on advices given 3. Patient's understanding of impairing properties of the medication 4. Specific actions to achieve fitness to drive (changes in medication or instructions for use) 5. Follow up visit for evaluation of interventions (advices given, self-assessment of patient)

3.2.5. Legal aspects

Legal aspects that need more attention when consulting patients who drive, are those related to frequently asked questions about it. An example of a legal aspect frequently asked is the following: a patient has caused an accident while using a medicine with impairing properties. The terms of their insurance for covering any possible costs due to damage or injury might give the answers. But how to respond to claims by insurance companies that will address the responsibility issue in those cases at the physicians' and pharmacists' side? It is advised to have a set of standard operating procedures or instructions implemented by which it can be shown how advices to patients are normally provided. Furthermore a note in the patients' record that advices and warning were provided to the patient will satisfy the needs of any legal investigation.

Many countries will have specific legislation enforced by which the health care professional's advice to a patient about the medicine's side effects (including those on driving performance) is required. It is expected that in those countries procedures and instructions (e.g. to pharmacy technicians) need to be in place. It is advised to inform the participants about these legal issues in their respective countries during the training course.

3.3. Description of fact sheets for individual medicines

In order to produce the categorization and labelling of the various medicines on driving a "fact sheet" has been developed for individual medicines in the N01-N07 ATC classes (psychotropic medicines) in WP4 (see Appendix A2.).

The fact sheets present all relevant information about the side effects, characteristics of the medicine during the metabolic processes in the body, and results from studies in experimental human psychopharmacology in a standardized and structured manner.

Each fact sheet contains the following sections:

1: Information regarding the new filename and date of production - review

2: Medicine being evaluated

3: Source of information

4: Presentations

5: Indications

6: Posology and method of administration

7: Pharmacodynamic properties

8: Pharmacokinetic properties

9: Possible side effects that relate to driving

10: SPC section 4.7 effects on fitness to drive and use machines

11: Leaflet section on driving: driving and using machines

12: Studies on psychomotor performance and risk studies

13: Categorization in some EU countries

14: Proposed categorization

15: Information for the patient

16: Place and date of agreement by the DRUID WP4 members

Regarding "Possible side effects that relate to driving" (9), the information on Section 4.8 on the SPC – Summary of Products Characteristics - (or the information from the package insert) was used.

Recently EMEA (European Medicinal Evaluation Agency) has started to use the following categorization on frequency of undesirable effects, side effects or adverse reactions in the SPC.

- Very common (>1/10)
- common (>1/100, <1/10)
- uncommon (>1/1,000, <1/100)
- rare (>1/10,000, <1/1,000)
- very rare (<1/10,000)
- Not known (cannot be estimated from the available data, since no valid estimate can be derived from clinical trials or epidemiological studies).

In older medicinal drugs this information may not be available in those terms. In this case other sources could be reviewed if needed (for example by checking the information on reviews about the medicinal drug).

Regarding undesirable effects of the medicine, in a first step the frequency of occurrence is taken into account. In this way, only those undesirable effect that occur very common (>1/10) and common (>1/100, <1/10) will be considered. In a second step, it will be considered whether or not such undesirable effects can potentially impair the fitness to drive safely.

The potentially undesirable effects to be considered are listed below (Table 7):

Table 7: Undesirable effects that can impair the fitness to drive

System organ class	Selection of undesirable effects that can impair the fitness to drive safely
Nervous system disorders	▪ Somnolence, dizziness, drowsiness ▪ Confusion - cognitive disorder- disorientation ▪ Involuntary movement disorders: ataxia, tremor, Parkinsonism, acute dystonic (dyskinesia) and dyskinetic reactions (dystonia) ▪ Convulsions -seizures
Psychiatric disorders	▪ Perception disturbances (hallucination, visual hallucination, auditory hallucination, illusion)

	▪ Psychotic reactions and psychotic disorder (including paranoia psychosis) ▪ [Other: Emotional liability, mood swings, aggression, nervousness, irritability, personality disorders, thinking abnormal, abnormal behaviour, euphoric mood, restlessness (emotional state of excitement), depersonalisation]
Eye disorders	▪ Diplopia or double vision, ▪ Blurred vision ▪ Accommodation disorders ▪ Visual acuity reduced ▪ Photophobia ▪ [Other: visual field defect, peripheral vision loss, altered visual depth perception, oculogyric crisis].
Ear and Labyrinth disorders	▪ Vertigo ▪ Hearing loss ▪ [Other: buzzing, tinnitus]
Metabolism and nutrition disorders	▪ Hypoglycaemia

In case some side effects appear at the beginning of treatment or if there is tolerance over time to the occurrence of such undesirable effects, this should be mentioned.

Regarding section 12 “Studies on psychomotor performance and risk studies”, a literature search was conducted in international databases such as
- Medline – PubMed: http://www.ncbi.nlm.nih.gov/pubmed/
- Science Direct: http://www.sciencedirect.com/
- PsycINFO: http://www.apa.org/psycinfo/

Among other the following key word were used following the MeSH terminology (Pub Med):
- drug + psychomotor performance;
- drug + automobile driving;
- drug + traffic accidents.

The fact sheets will be available in the decision support tools (integrated and on a separate CD-Rom/USB stick). These will allow health care professionals to be able to review all existing knowledge about a medicine’s potential impairing properties.

3.4. Overview of prototype information and dissemination documents

The Training Manual allows physicians and pharmacists to (jointly) discuss the issues that are relevant for improving prescribing and dispensing practices. But if these (joint) courses are not possible the following information will be useful as well for improving the daily practice.

This Training Manual includes short homework assignments for health care providers for familiarizing themselves with medicinal categorization and warning levels and advices described in the various prototype information and dissemination documents or brochures (see Table 8). By applying knowledge tests and case studies (see Appendix A3 and A4), the issues concerning medicines that might impair driving skills can be discussed. Afterwards, agreements (see Appendix A5) can be made concerning the (joint) policy in case of prescribing and dispensing medicines that might impair driving performance.

Table 8: Prototype documents

DRUID experts have developed prototype documents to address specific target groups. The main aim of these documents is promoting the safe and rational use of medicines with regard to the participation in traffic. The prototype documents address the general public (driver/medicinal drug user) as well as health care professionals (physicians and pharmacists):

- Brochure for physicians and pharmacists with information about counseling the patient-driver regarding medication use and driving.
- Brochure for the general public with information regarding medication use and driving
- Brochure for drivers as patients with information regarding how disease/medication can affect driving.
- Brochure for the younger public especially focusing on multiple drug use (licit and / or illicit) with or without use of alcohol.

Prototype documents for information regarding psychoactive substances and driving have been produced by DRUID WP7 Partners (D7.3.1). According to the Core Contract of the DRUID Project, these European Traffic Safety brochures should have the potential to be understood easily by the target groups to whom they are addressed, and designed to be multilingual in a later stage of the project. The different brochures are presented in the Appendix A1.1 to A1.4.

4. Decision support tools for daily practice (study-site specific)

4.1 Integrated decision support software for physicians and pharmacists

4.1.1. Dutch support software for pharmacists

In the Netherlands there is a special situation, since on October 8th 2008 a national campaign was launched to address the medicines and driving issues. In preparing that campaign the Dutch government funded the development of information materials, websites and ICT–oriented support in dispensing practices (no specific ICT-oriented support for physicians). Based on that assignment Health Base Foundation (supplier of content for 50% of all community pharmacies in the Netherlands using the Pharmacom®-computer system) has developed additional information pertaining to the categorisation system as a support to counselling patients during dispensing a medicine. In case of a first dispensing to an individual patient (at the start of treatment) specific information in a protocol will be shown on the computer screen.

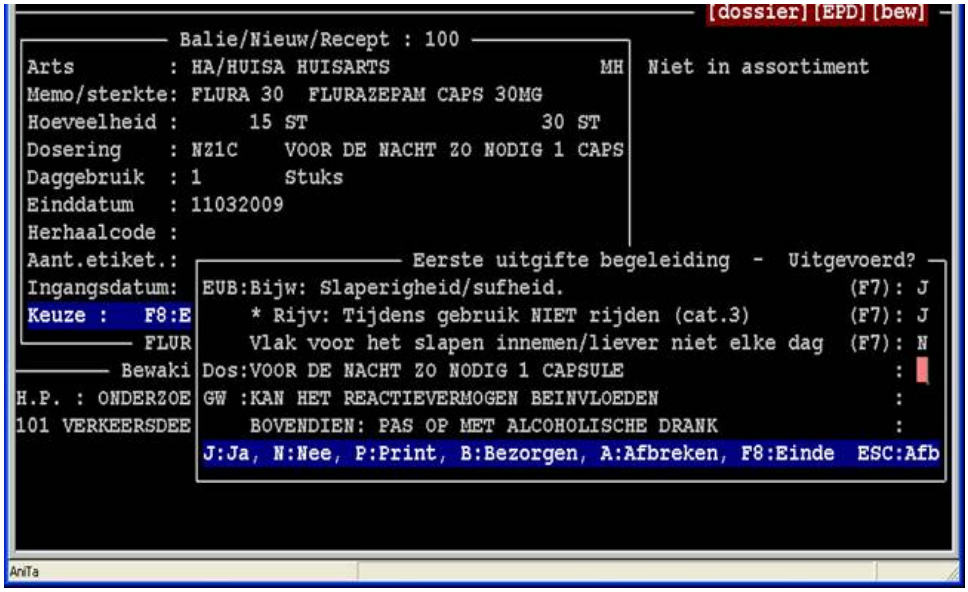


Figure 2: The Dutch dispensing and counselling support software for pharmacists

Note:
Translations of the section First dispensing guidance PROTOCOL (*Eerste uitgifte begeleiding*)

First dispensing: Side effects: sleepiness, sedation	(F7)	: J
Driving: Do not drive while taking this medicine (cat. 3)	(F7)	: J
Take before the night/preferably not every day	(F7)	: N
Dosage: Before the night 1 capsule if needed		:
Instruction for use: Might influence driving performance		:
Do not take with alcoholic beverages		:

Instructions to the pharmacy technicians:

- Explain to the patient each of the lines in the PROTOCOL and indicated “J” (Yes) if you did and “N” (No) if you did not.
- If you need background information please press “F7”

In case of “Driving": Do not drive while taking this medicine (cat. 3)” pressing (F7) will show the following background information:

GENERAL INFORMATION

- The medicine has a severe influence on driving performance (cat. 3)
- If taken daily: do not drive
- If taken infrequently: do not drive during 3 days after intake.
- Take care in circumstances that require unaffected attention (e.g. operating machinery)
- Impairment by side effects, such as sedation, sleepiness, dizziness, blurred vision, impaired reaction time
- Even without these side effects impaired driving performance might occur
- Alcohol will potentiate impaired driving performance: do not drive!

PERSONAL COUNSELLING IS NEEDED:
- Concomitant use with other medication that might impair driving performance
- Liver or renal dysfunction
- Adherence to the advise given will be a problem, according to the patient

The system allows a repetition of this presentation on the computer screen (with some differences) at the second dispensing (due to mandatory rules normally 2 weeks after the start of treatment). Especially the lines in the protocol that have been logged with a "N" or without any response during first dispensing will be shown again for counselling the patient. All these logged responses during first and second dispensing will be analyzed for evaluating its effectiveness in T7.4 (more details in D7.4.2).

Note: Compared to the involvement of community pharmacists in the Netherlands, the involvement of GPs will be rather difficult in the T7.4 evaluation study, since the Dutch campaign (October 2008) has offered GPs with materials to modify their software packages for prescribing driving impairing medicines. But the interest of GPs was not strong enough to call for a need to change their prescribing software and no financial funding and subsequent priority setting will be expected to modify software packages in the near future.

4.1.2. Spanish support software for pharmacists

The Spanish trial will be in collaboration with the Consejo General de Farmacéuticos de España, Colegio Oficial de Farmacéuticos de Valladolid, Consejería de Sanidad de la Junta de Castilla y León, Sociedad Española de Toxicomanías, Sociedad Española de Medicina de Tráfico. Foreseen support from the Ministerio de Sanidad y Consumo and Dirección General de Tráfico (DGT) is expected.

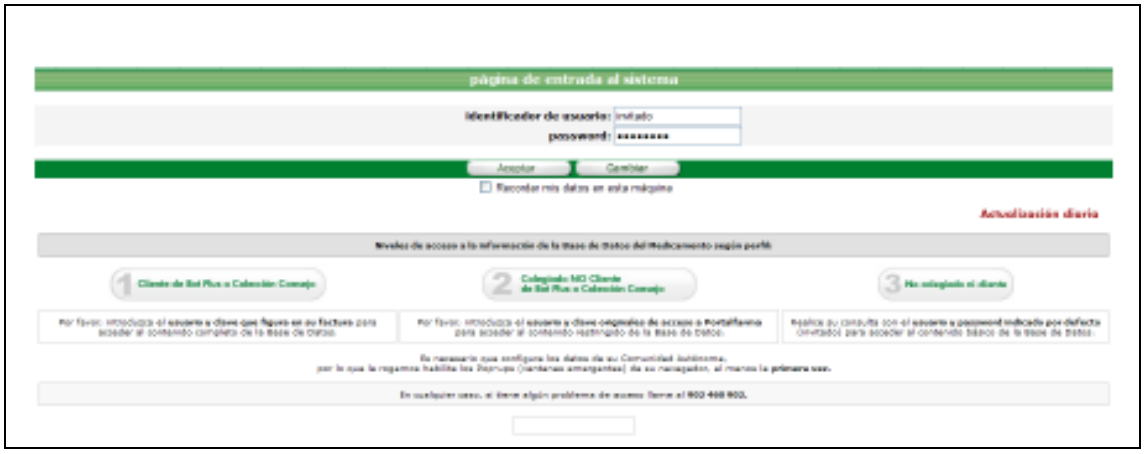
Most of physicians work for the public health system. Therefore to have access and modify the prescribing tools is quite difficult. Regarding community pharmacist, most of them used the tools provided by the Consejo General de Farmacéuticos de España (Association of Spanish Pharmacists). Below some pictures are shown of the on-line access to the tool. At present in Spain, a pictogram is included on the box of certain medicines regarding driving.

Figure 3: Pictogram in the medicines' box regarding driving.

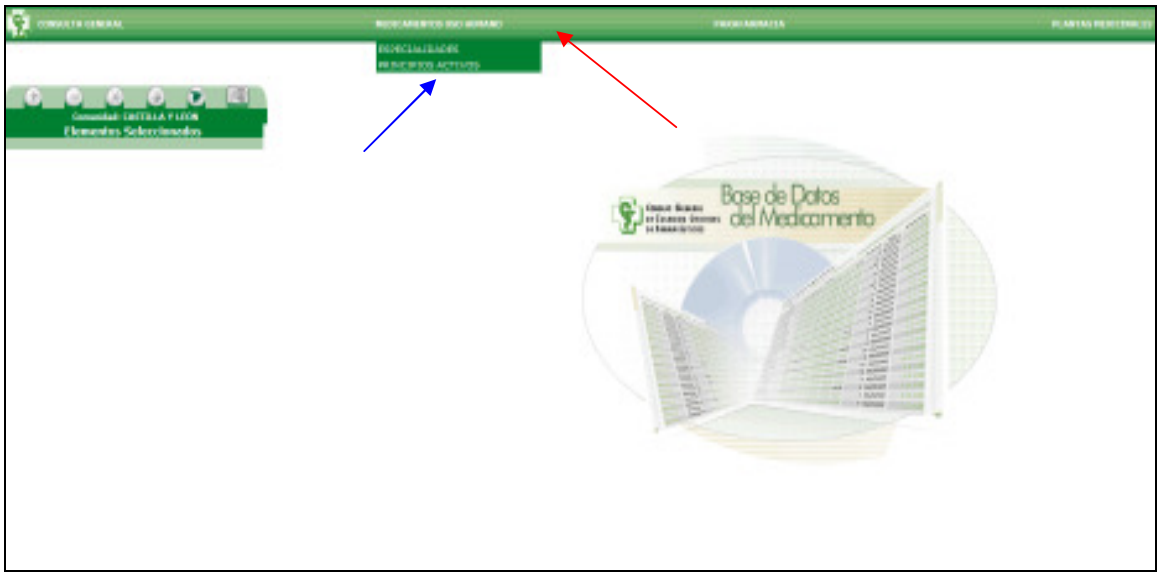
The tool made an alert when a medicine with such pictogram is prescribed. It is under evaluation the possibility to include DRUID categorization and patient's information in that tool. The portalfalma web site has public and open contents. Below is the home page of such a web site from the Consejo General de Farmacéuticos de España (Association of Spanish Pharmacists). The red arrow indicates the button from which information on Spanish available medicines can be obtained.

When accessing the database on available medicines in Spain, there are two different sources. One is the open database. This is marked with a red arrow below.

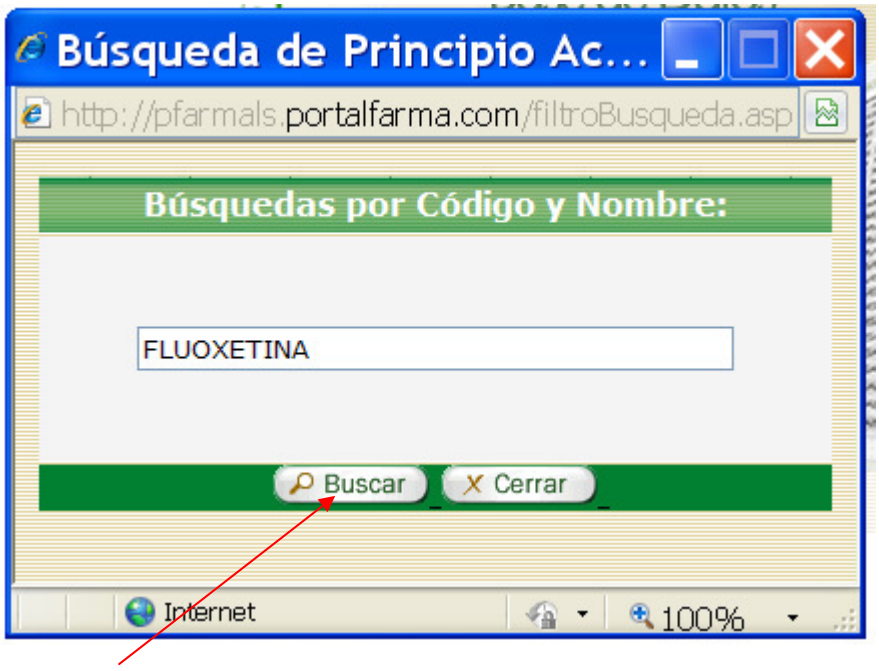
Below is the screen that appears when accessing such a database on available medicines in Spain. It is possible to have open access (as shown by default in the screen below) or pharmacists can access with their own username and password to have full access to contents.



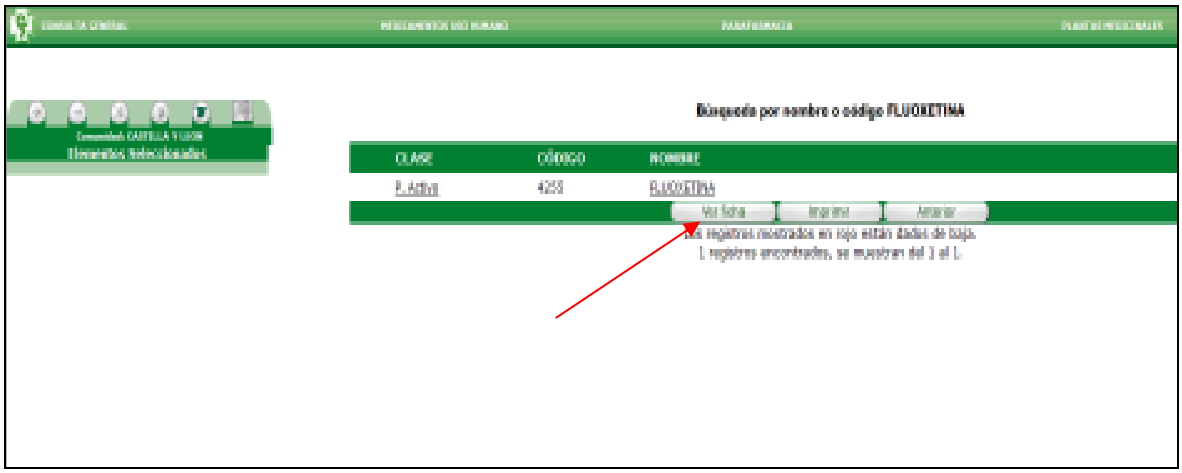
The database can give access to information by substance name (example fluoxetine, please see red arrow) or by registered – trade name (example, Prozac®, please see blue arrow).



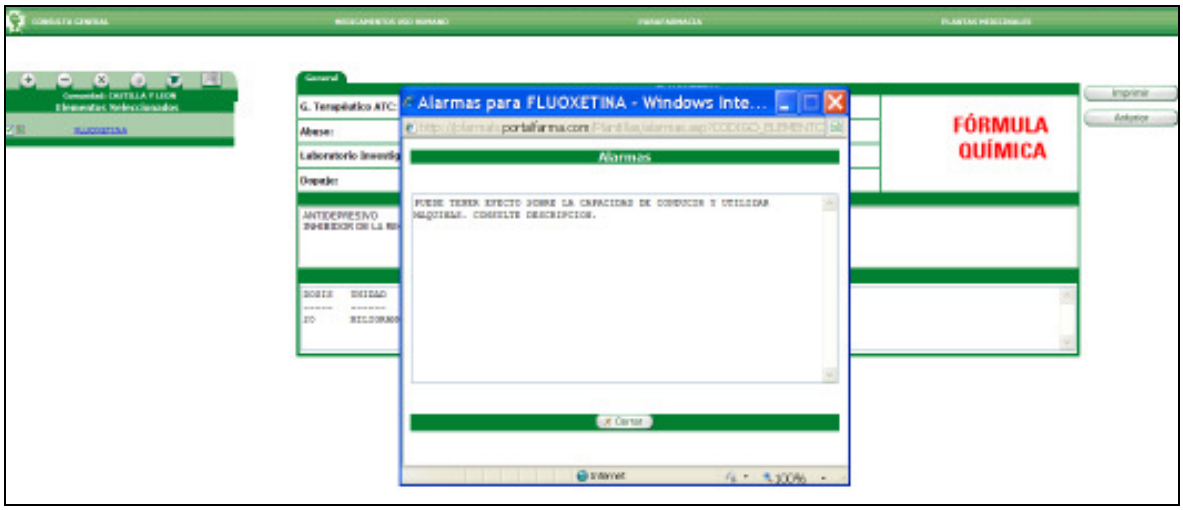
Below is an example when searching by substance name (fluoxetine). After writing the name, the search option should be clicked (please see red arrow).



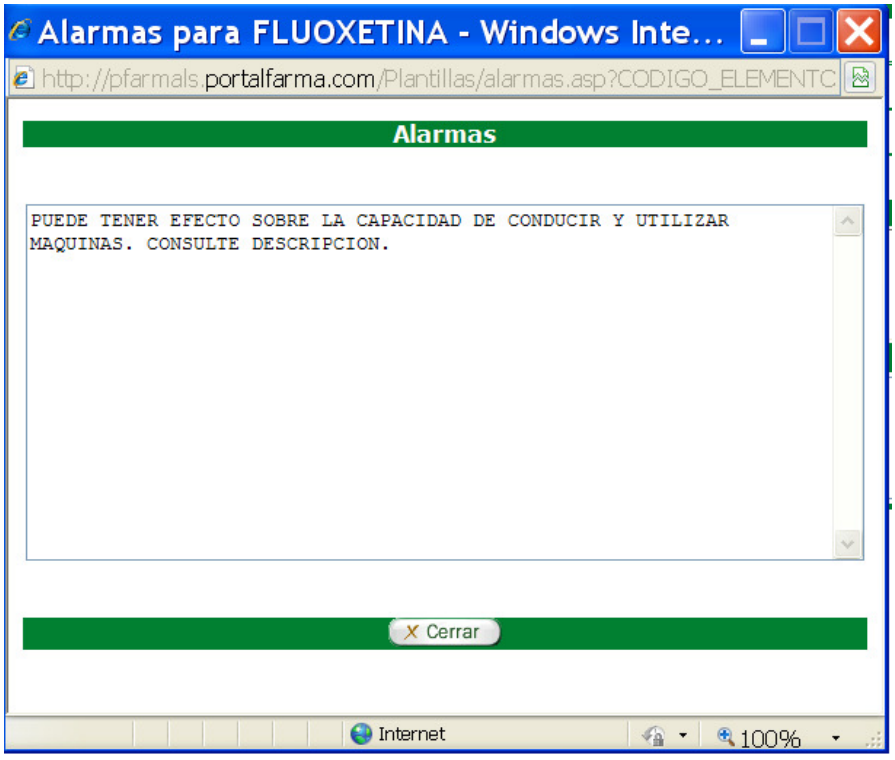
It is also possible to have access to different contents. One is the Summary of Product Characteristics (see red arrow below).



As available pharmaceutical products in Spain containing fluoxetine should have the Pictogram on the medicines' box regarding driving (see Figure 3), a warning appears before accessing the Summary of Product Characteristics.



The screen below shows the warning: *This medicine could affect driving and using machines. Please check the description* (this refers to the relevant section on the package insert and Summary of Product Characteristics).

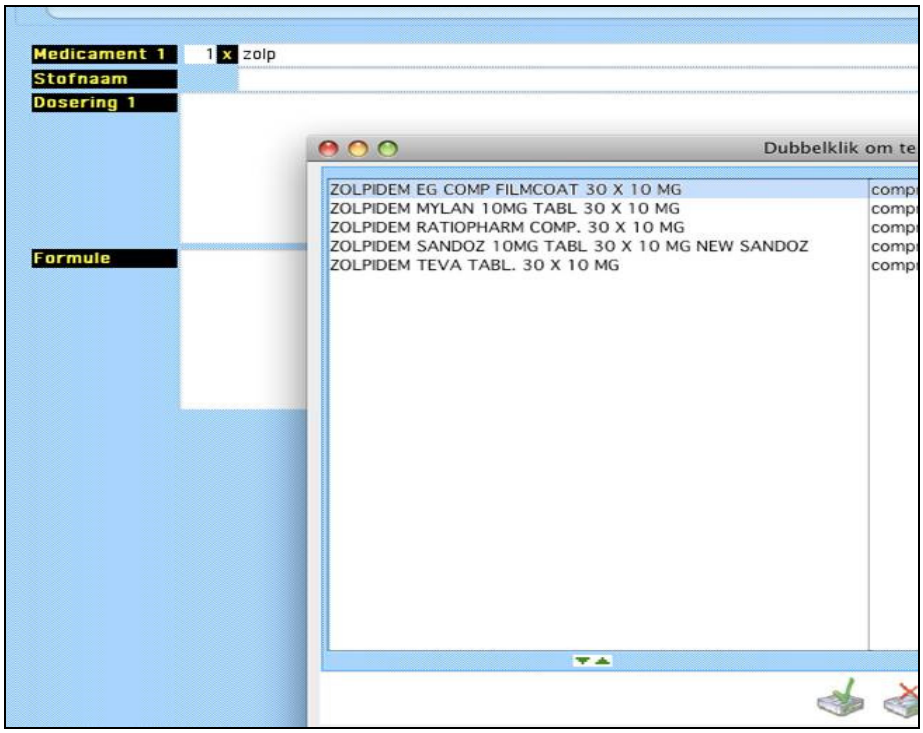


4.1.3. Belgian support software for physicians and pharmacists

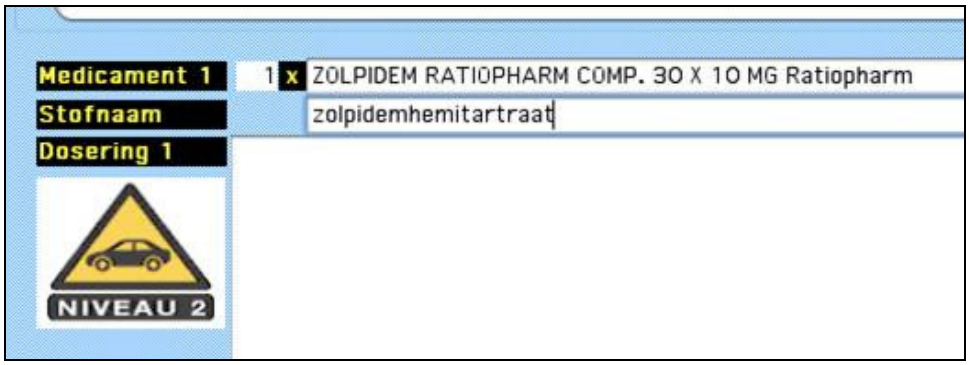
SoSoeMe integrated tool for physicians

A new function has been added in the SoSoeMe-software, in order to assist professionals to prescribe medicines. The steps for using this new module are described below:

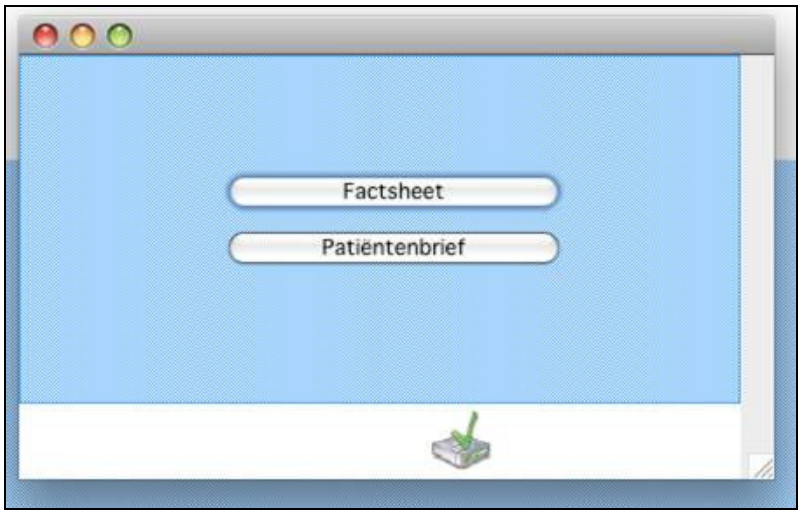
Step 1: In the prescribing module, the user types in the first letters of the medication (e.g. zolp).



Step 2: When a specific medication is chosen, the correct pictogram appears.



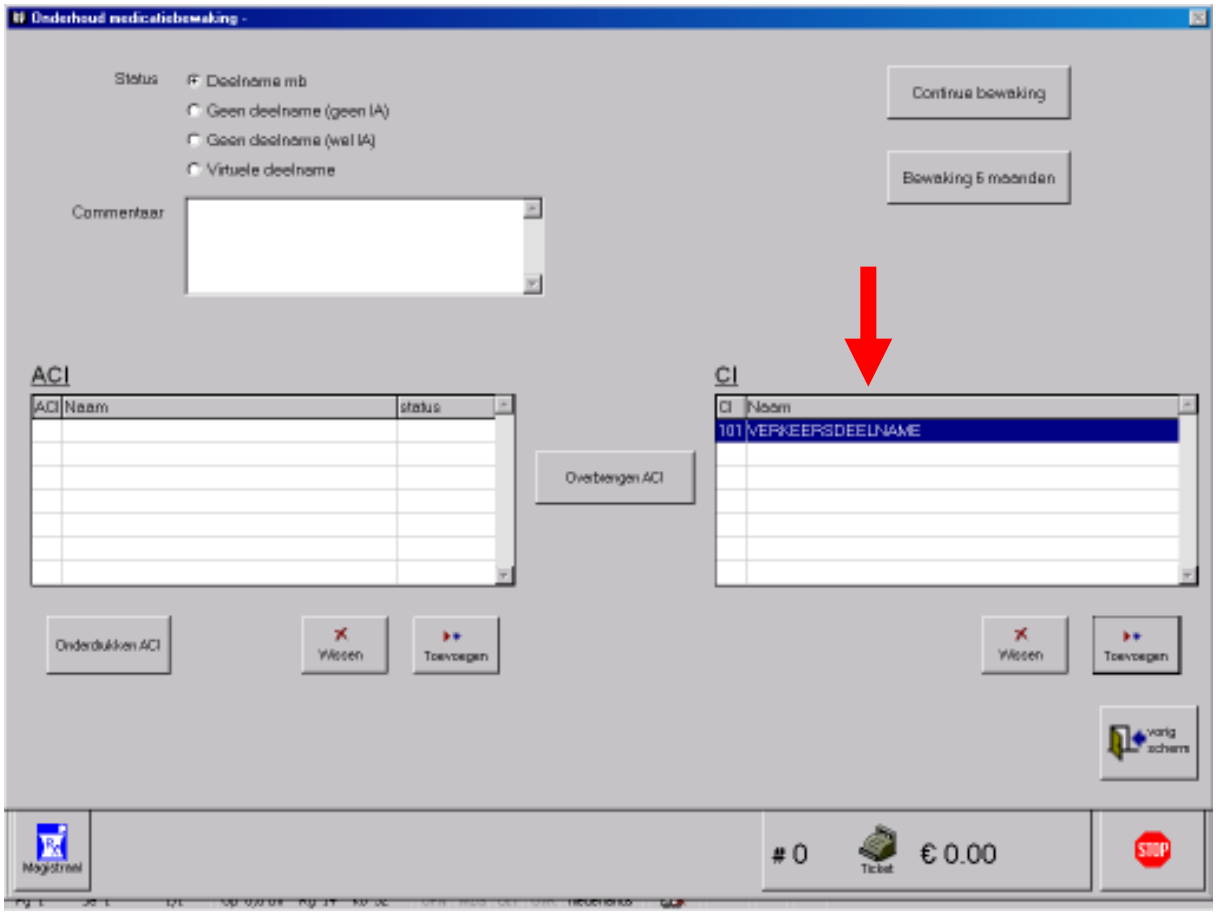
Step 3: When the user clicks on the pictogram, a pop-up with a choice for 'factsheet' or 'patient information letter' appears. It is then recorded in the patient file which of these two buttons is clicked on.



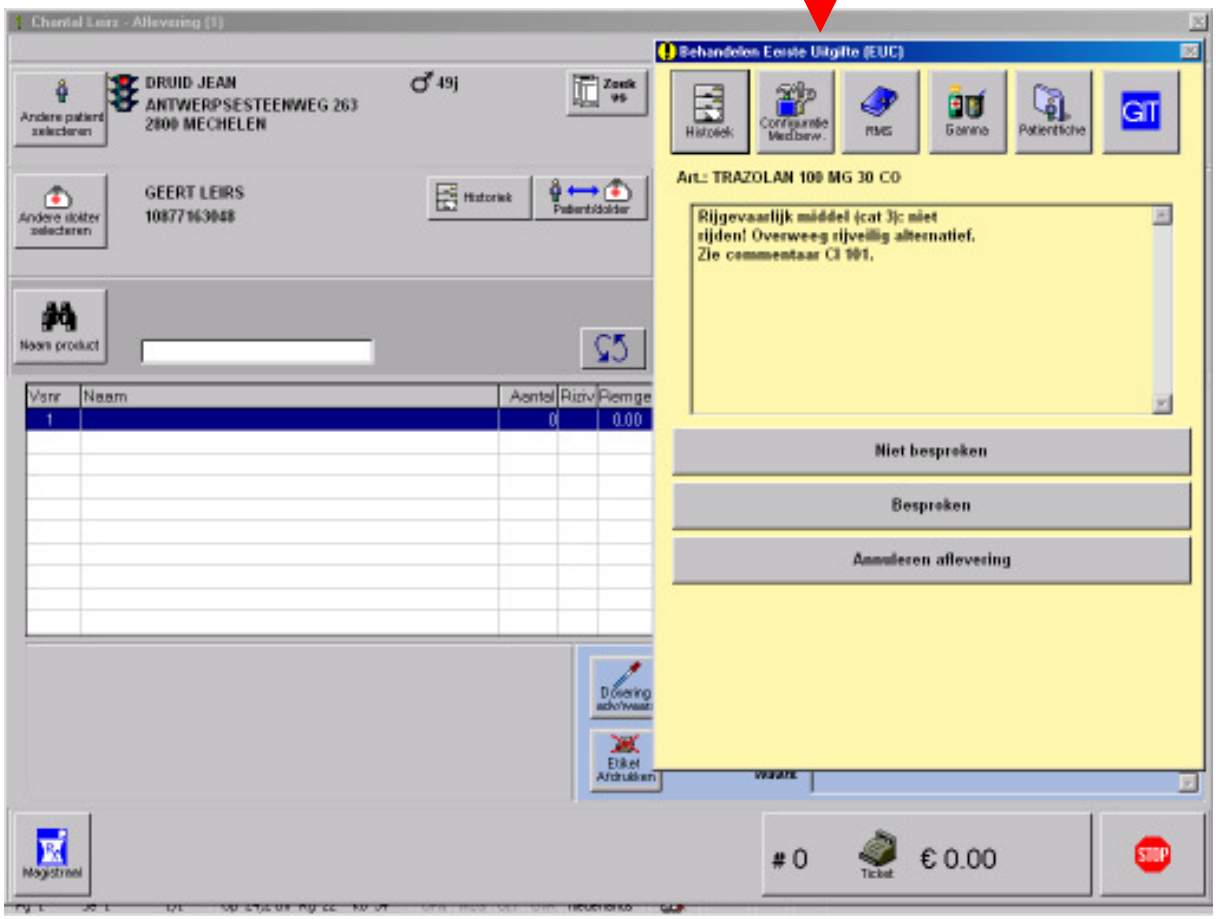
Information on medicines and driving functions in pharmacy software ViaNova for pharmacists

Information on medicines and driving is integrated in ViaNova on several places. As an example, some screenshots of functions appearing when dispensing Trazolan are given. Trazolan contains trazodone, a driving impairing substance (cat. 3)

The patient Jean Druid (48 years old) is a taxi driver. For this reason, he is flagged with the contra-indication “traffic participation” in the pharmacy software. This generates a warning whenever an impairing substance is dispensed.



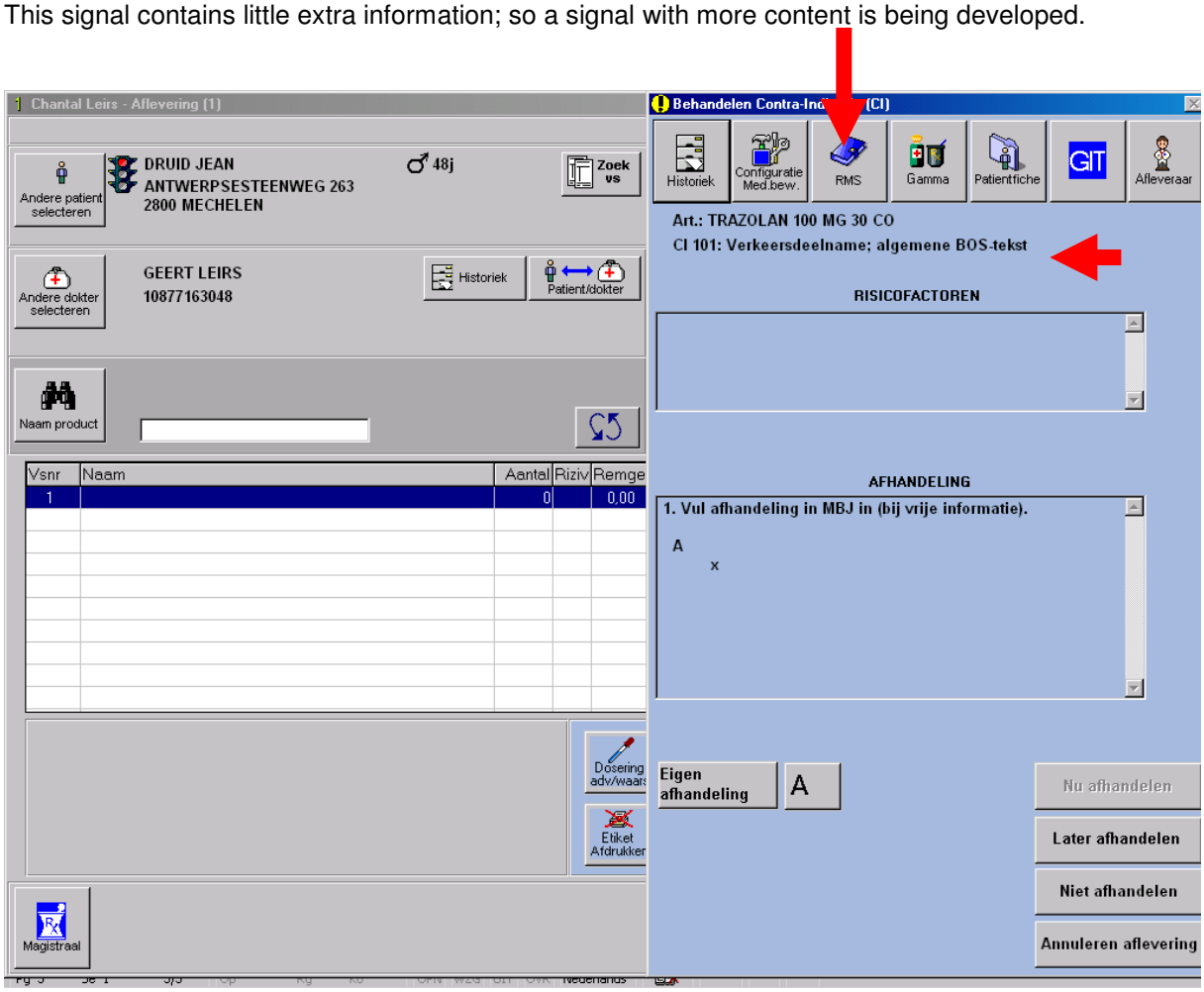
Jean Druid goes to the pharmacy with a prescription for Trazolan tablets 100 mg. He has never used this medicine before. ViaNova gives a warning in the form of a First Dispensing Control signal (EUC = Eerste Uitgifte Controle-signaal). The system gives a general warning that trazodone is a driving impairing medicine and that a safer alternative should be taken into consideration.



Jean Druid indicates that he will not be able to work for one month and that he wants to start the treatment… He will consult his physician after this month to evaluate the possibilities. During his sick leave, his wife will have to drive the car.
The pharmacist continues with the dispensing.

Because Jean Druid is known in ViaNova as a professional driver (flag contra-indication “traffic participation”) the contra-indication-signal below appears.

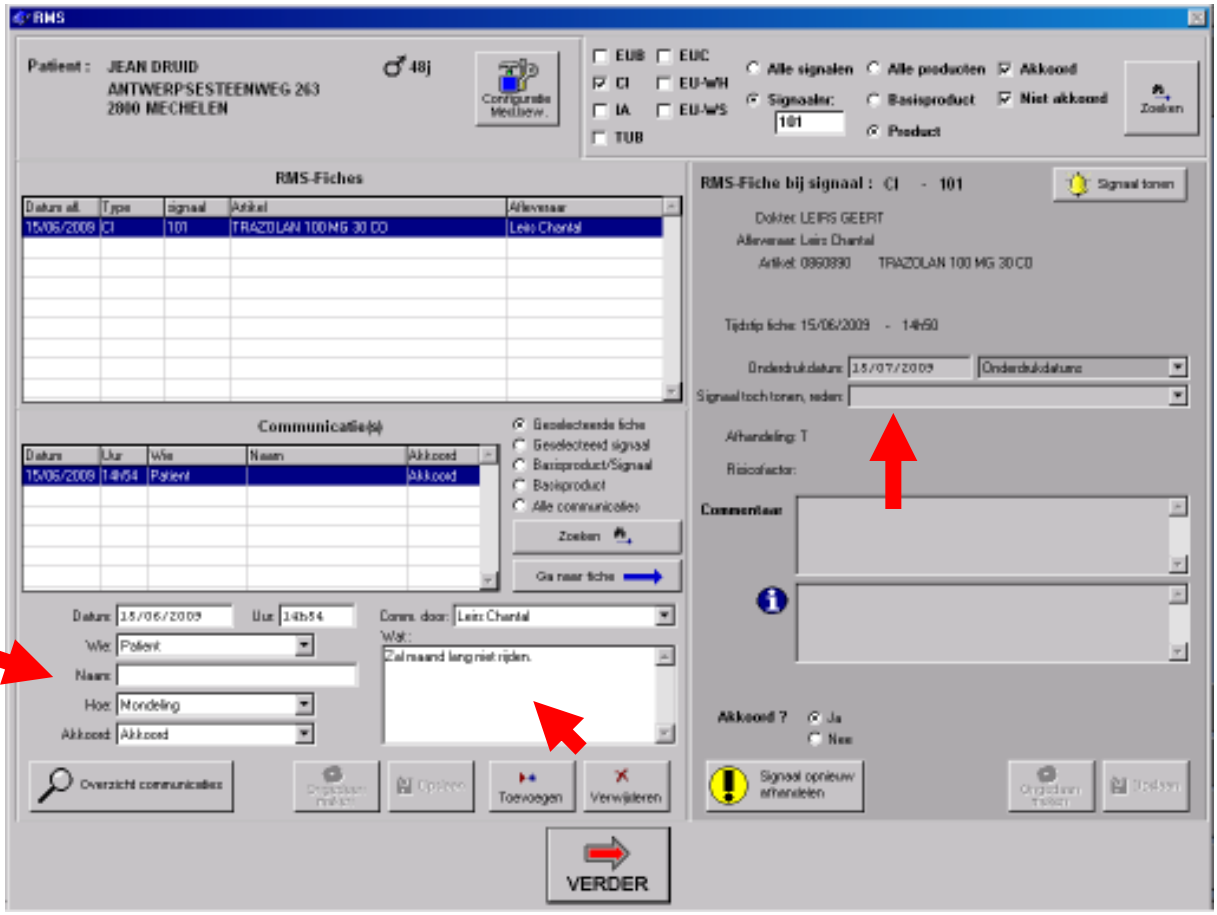
Remark:
This signal contains little extra information; so a signal with more content is being developed.



During the settlement of this signal, ViaNova guides the pharmacist to the RMS (register medication surveillance signals), where the care given can be recorded.
The pharmacist registers:

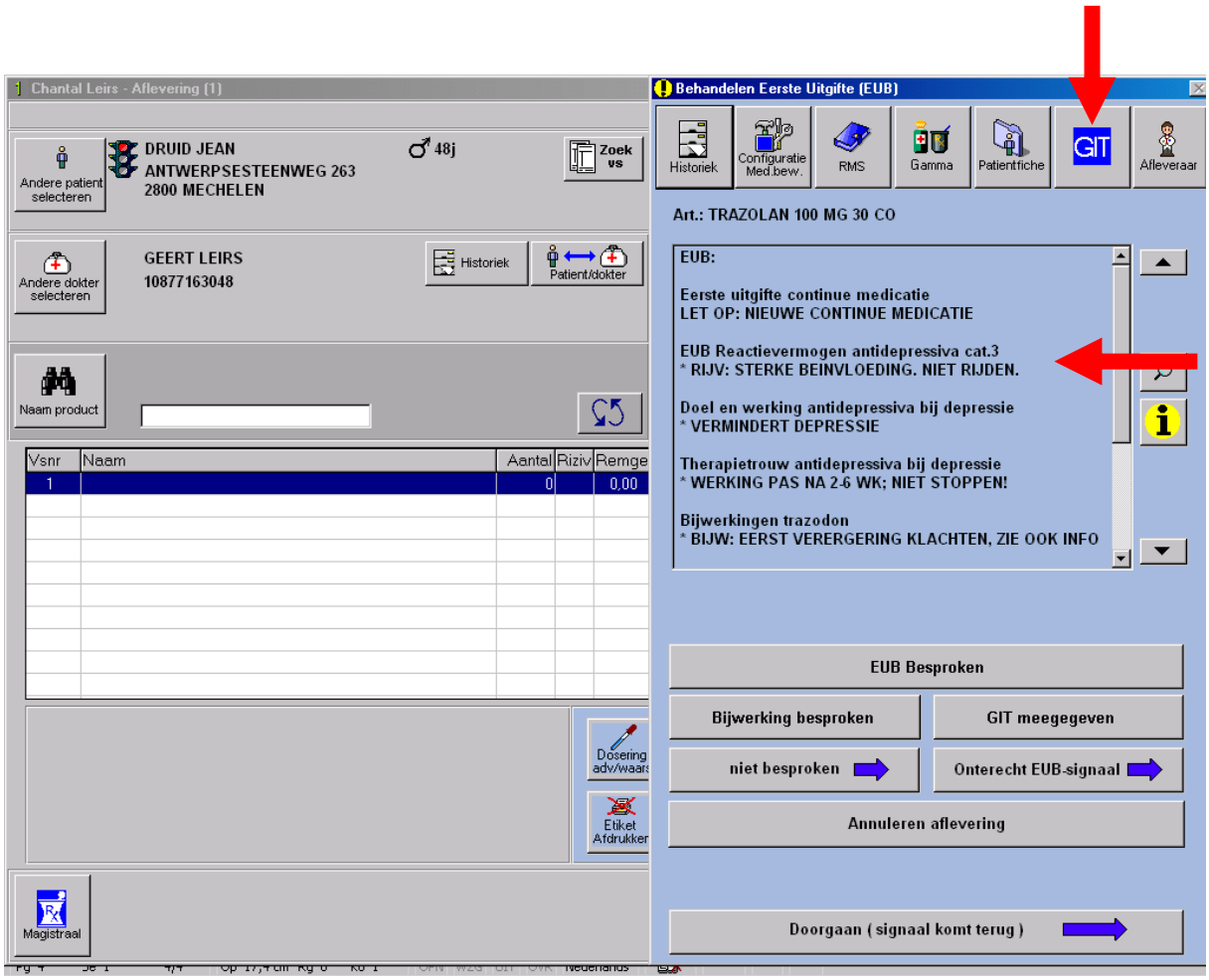
- that Jean will not drive for a month
- that he does not want to see this CI-signal for a month (even if Jean comes to the pharmacy during this month for a box Trazolan). If Jean comes to the pharmacy for a box Trazolan after this month, a signal should again appear.

The information in the RMS can at all times be asked for.

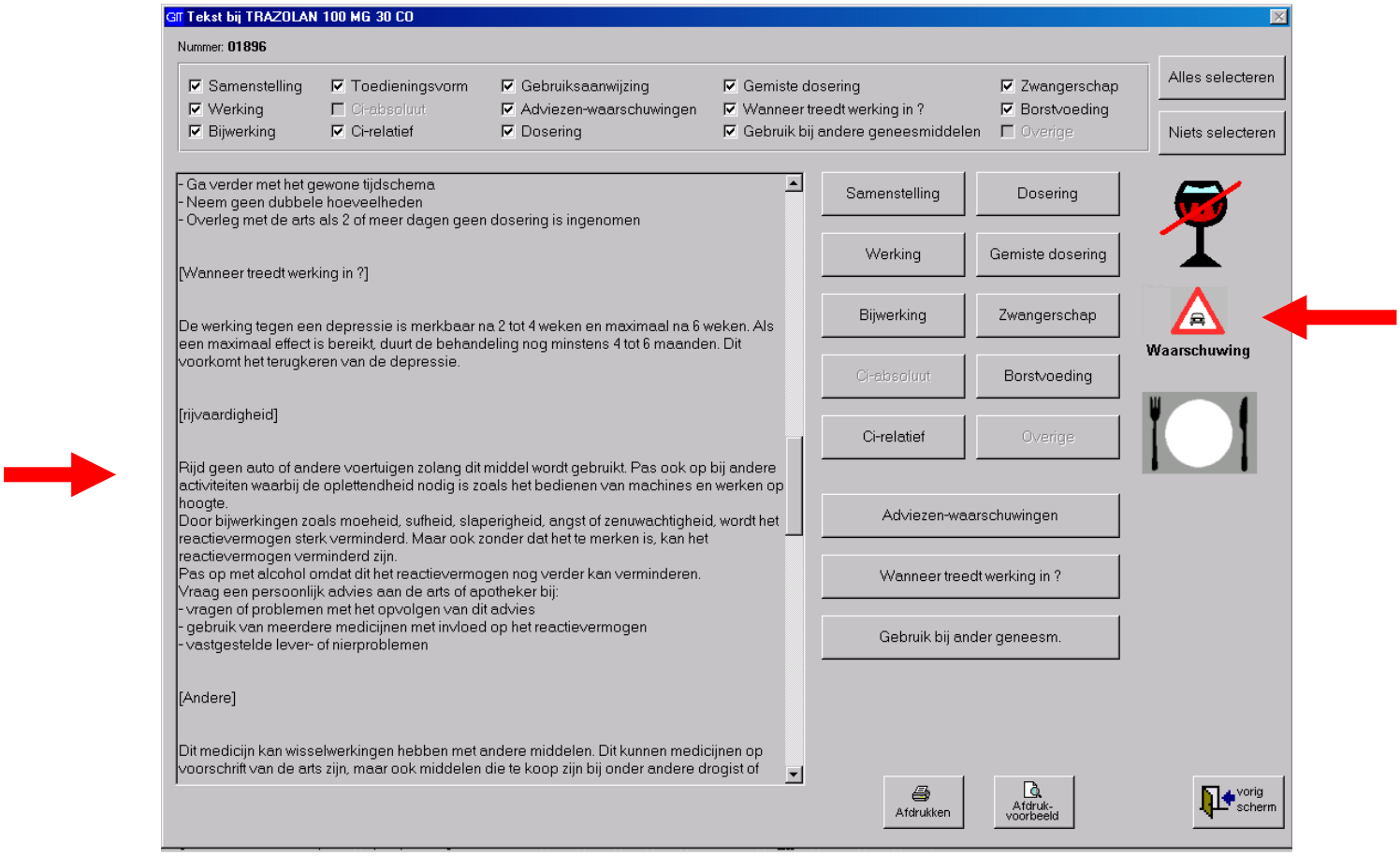


Once it is decided to dispense the Trazolan, a First Dispensing Guidance signal (EUB = Eerste Uitgifte Begeleidingssignaal) appears. In this signal, a number of important notes are made that should certainly be explained to the patient before he uses the medication for the first time. The influence on driving is one of them.

The information transfer from pharmacist to patient can be supported by the Medicine Information Text (GIT = Geneesmiddel Informatie Tekst). The GIT is consultable within ViaNova, but can also be printed, so it can be given to the patient (see examples later on).

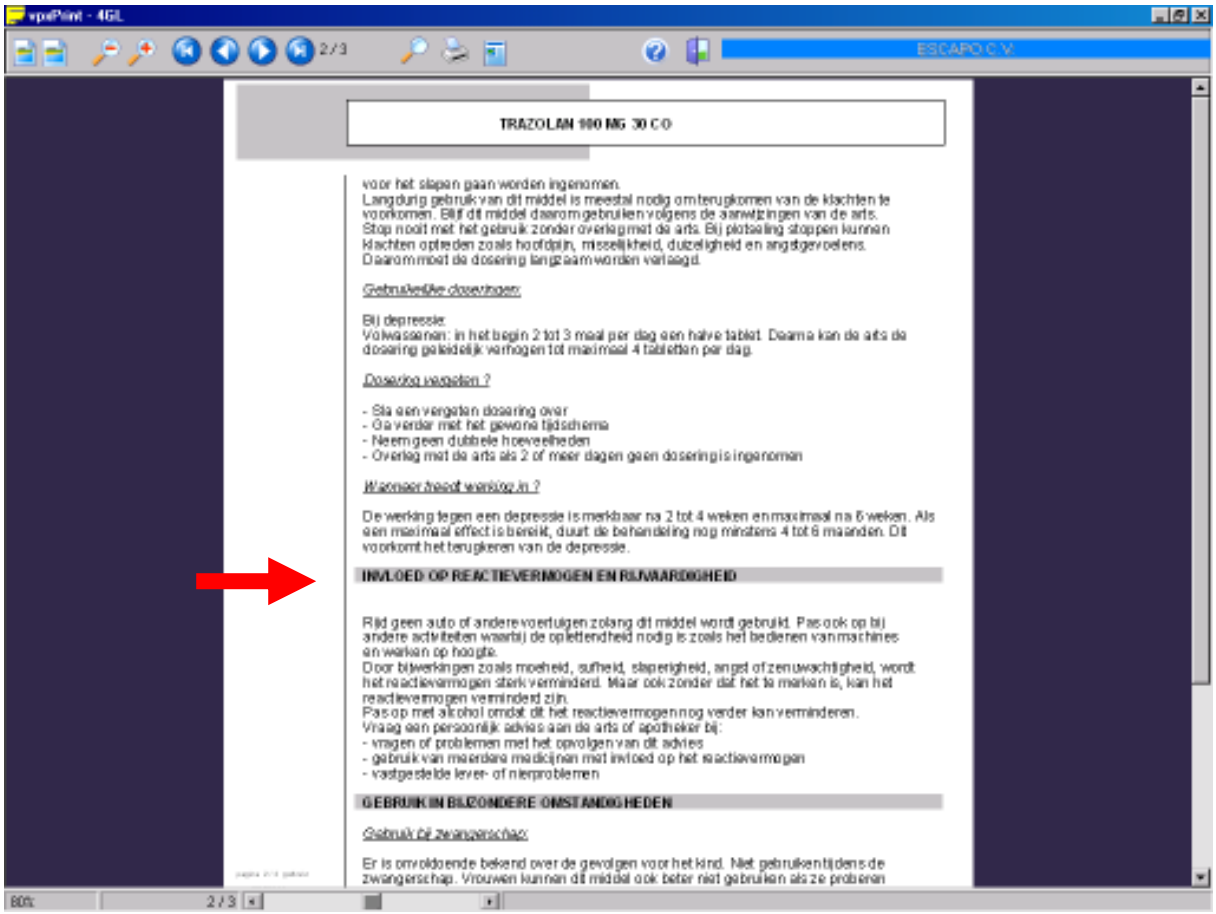


Clicking the button GIT gives the following screen:



Information on driving is available on two places on this screen (cf. red arrows above).

The print that Jean Druid receives to take home is shown below:



TRAZOLAN 100 MG 30 CO

voor het slapen gaan worden ingenomen.
Langdurig gebruik van dit middel is meestal nodig om terugkomen van de klachten te voorkomen. Blijf dit middel daarom gebruiken volgens de aanwijzingen van de arts. Stop nooit met het gebruik zonder overleg met de arts. Bij plotseling stoppen kunnen klachten optreden zoals hoofdpijn, misselijkheid, duizeligheid en angstgevoelens. Daarom moet de dosering langzaam worden verlaagd.

Gebruikelijke doseringen:

Bij depressie:
Volwassenen: in het begin 2 tot 3 maal per dag een halve tablet. Daarna kan de arts de dosering geleidelijk verhogen tot maximaal 4 tabletten per dag.

Dosering vergeten ?

- Sla een vergeten dosering over
- Ga verder met het gewone tijdschema
- Neem geen dubbele hoeveelheden
- Overleg met de arts als 2 of meer dagen geen dosering is ingenomen

Wanneer treedt werking in ?

De werking tegen een depressie is merkbaar na 2 tot 4 weken en maximaal na 6 weken. Als een maximaal effect is bereikt, duurt de behandeling nog minstens 4 tot 6 maanden. Dit voorkomt het terugkeren van de depressie.

INVLOED OP REACTIEVERMOGEN EN RIJVAARDIGHEID

Rijd geen auto of andere voertuigen zolang dit middel wordt gebruikt. Pas ook op bij andere activiteiten waarbij de oplettendheid nodig is zoals het bedienen van machines en werken op hoogte.
Door bijwerkingen zoals moeheid, suffheid, slaperigheid, angst of zenuwachtigheid, wordt het reactievermogen sterk verminderd. Maar ook zonder dat het te merken is, kan het reactievermogen verminderd zijn.
Pas op met alcohol omdat dit het reactievermogen nog verder kan verminderen.
Vraag een persoonlijk advies aan de arts of apotheker bij:
- vragen of problemen met het opvolgen van dit advies
- gebruik van meerdere medicijnen met invloed op het reactievermogen
- vastgestelde lever- of nierproblemen

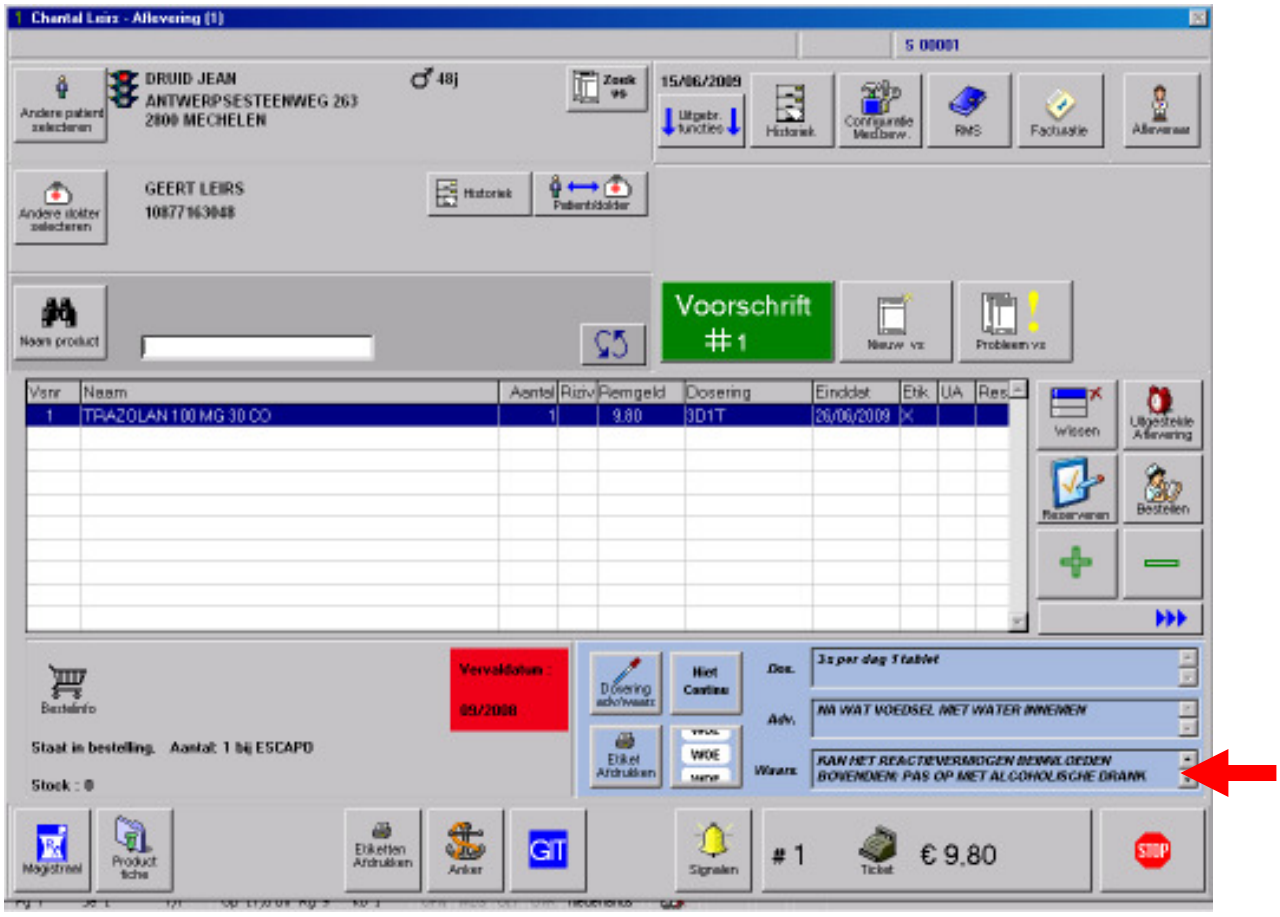
GEBRUIK IN BIJZONDERE OMSTANDIGHEDEN

Gebruik bij zwangerschap:

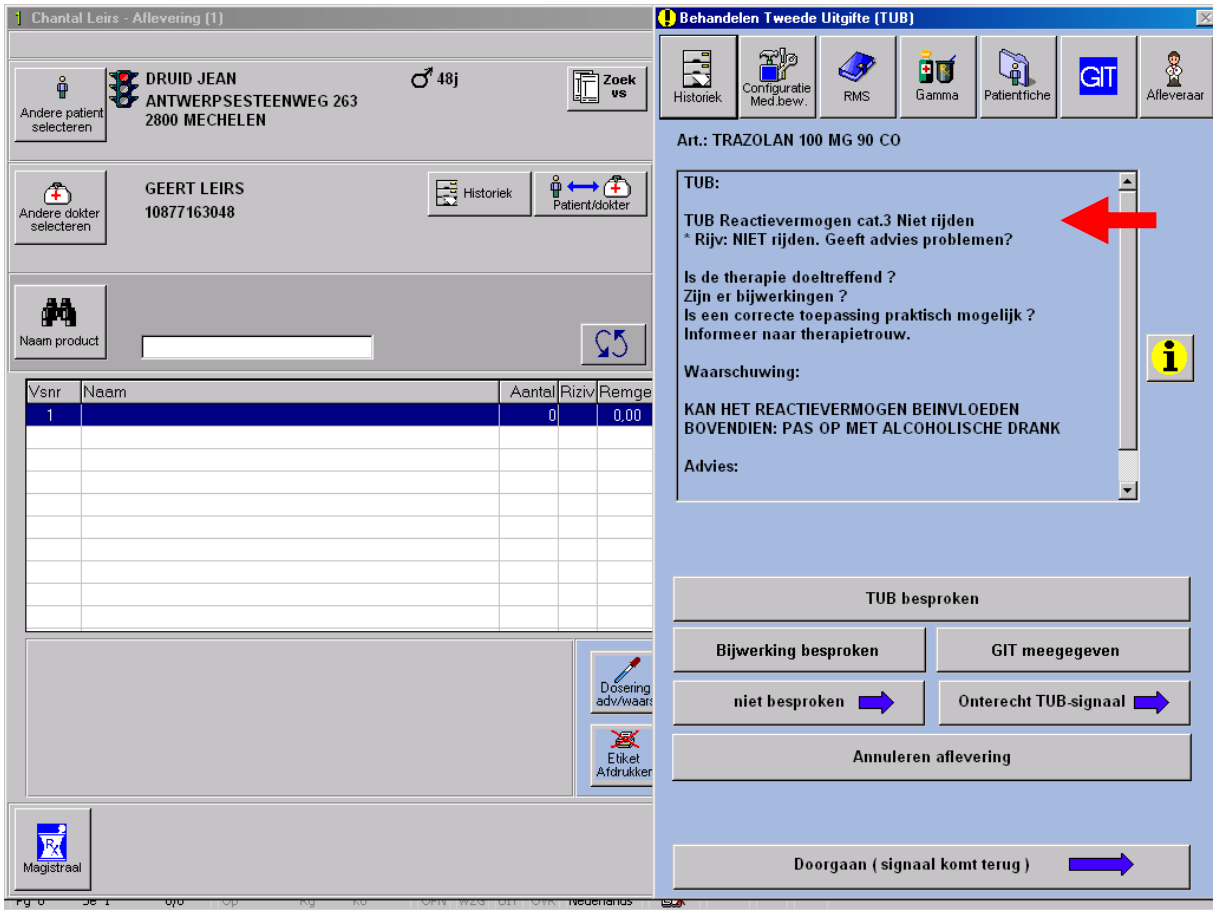
Er is onvoldoende bekend over de gevolgen voor het kind. Niet gebruiken tijdens de zwangerschap. Vrouwen kunnen dit middel ook beter niet gebruiken als ze proberen

This is page 2 out of 3. The pictograms are also shown in the printed version.

Finally, a sticker will be generated with short advices and warnings on the medication. The sticker is meant to be put on the box. For Trazolan, the warning deals with driving.



When Jean Druid returns a few days later to the pharmacy for his next box of Trazolan, a Second Dispensing Guidance signal (TUB = Tweede Uitgifte Begeleidingssignaal) appears, where information is asked about the good use of the medication. One of the attention points is whether or not the advice not to drive a car causes any problems.



The example with Trazolan is an extreme example: trazodone is a category 3 substance and those substances have a EUC. For codeine for instance (category 1 or 2, depending on the dose), this is not the case. The information in the EUB, TUB, CI, GIT and advices and warning are however maintained for codeine.

4.2 Website based decision support tool for physicians

The Spanish evaluation study for the physicians will include a website based decision support tool specifically developed within DRUID WP7. It is a restricted web area where a professional has to log in with his/her personal password. The physician will be able to fill in a specified field or to select from a menu the medicine that he/she decides to prescribe. A message will then appear concerning the categorization of the specific medicine. The physician will then have the choice to view the factsheet related to the medicine category and/or to print a patient information sheet. All actions (clicks on fields or buttons) will be stored for future statistical analysis. The Spanish country-specific Training Manual will also be included in the website.

Below, a draft version of pages of the website based decision support tool is presented.

Figure 4: Log in area of the draft web based tool

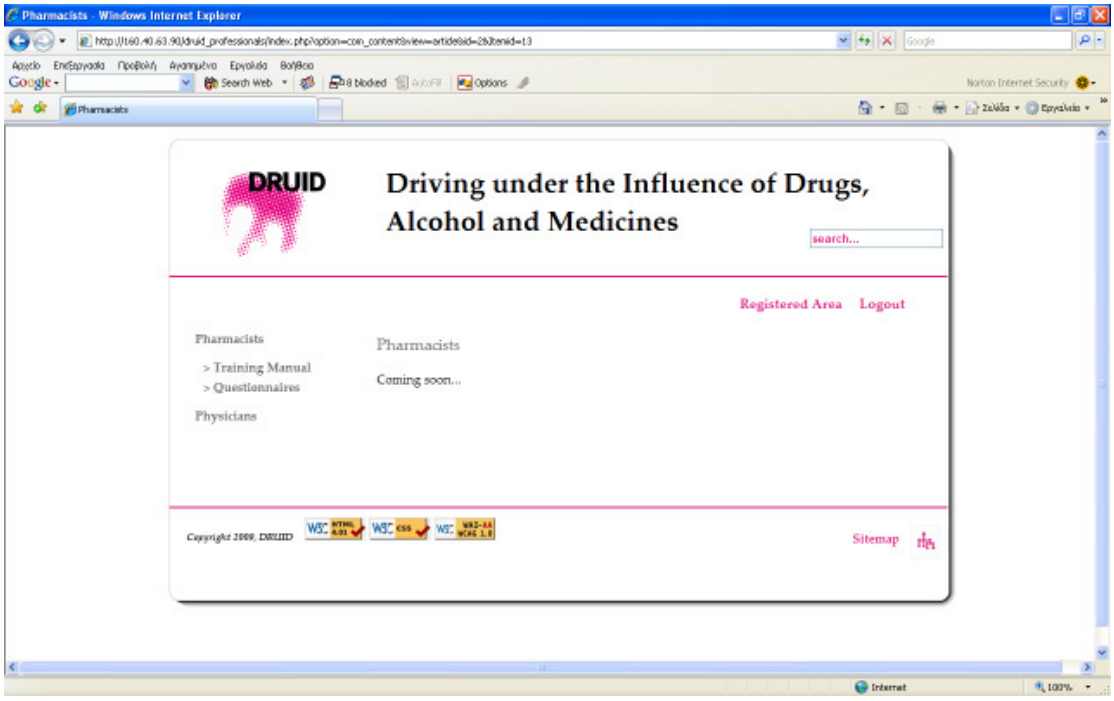


Figure 5: Menu page of the draft web based tool

4.3 Hardcopy decision support tool for physicians and pharmacists

As T7.4 includes evaluating the effectiveness of different types of decision support tools, two other stand-alone tools for the evaluation studies in Belgium and Spain are also developed:

- A CD-Rom with a simple search function, containing all the information derived from the fact sheets in T4.3 (D4.3.1).

- A book containing abbreviated fact sheets, only containing the information that is directly relevant in everyday practice.

5. References

ABDA. Ihr Leitfaden rund ums Thema "Arzneimittel im Strassenverkehr" Bundes-vereinigung Deutscher Apothekerverbände, Eschborn, Germany, 1997.

Alvarez FJ and Del Rio MC. Drugs and driving. Lancet, 1994;344:282.

Alvarez FJ. Prescribing medication for the driver: informing the patient on the effect of medication on driving ability. In: Alcohol, Drugs and Traffic Safety -T97, Mercier-Guyon Ch, Ed. CERMT, Annecy, France, 1997, 1283-96.

Alvarez FJ. Medicinal drugs and traffic safety: the Spanish experience. Papers presented at the 44th annual meeting of The International Association of Forensic Toxicologists (TIAFT2006) held in Ljubljana from 27 August - 1 September 2006.Symposium Medicinal drugs and human performance. http://www.tiaft2006.org/proceedings/pdf/MD-05.pdf

Ballenger JC. Current treatments of anxiety disorders in adults. Biol Psychiatry 1999;46:1579-94.

Barbone F, McMahon AD, Davey PG, Morris AD, Reid IC, McDevitt DG and MacDonald TM. Association of road-traffic accidents with benzodiazepine use. Lancet, 1998;352:1331-6.

Berghaus G, Friedel B et al. Guidelines on experimental studies undertaken to determine a medicinal drug's effect on driving or skills related to driving. Report of ICADTS Working Group, 1999.

Borkenstein RF, Crowther RF, Shumate RP, Ziel WB, Zylman R. The role of the drinking driver in traffic accidents (the Grand Rapids Study). Blutalkohol, 1974;11,Supplement 1.

Brookhuis KA, Volkerts ER, O'Hanlon JF. Repeated dose effects of lormetazepam and flurazepam upon driving performance. Eur J Clin Pharmacol 1990; 39: 83-87.

Cipolle RJ, Strand LM, Morley PC. Pharmaceutical care practice. McGraw-Hill, New York, 1998.

De Gier JJ. Drugs other than alcohol and driving in the European Union. Institute for Human Psychopharmacology, University of Maastricht, The Netherlands, Tech Report IHP 95-54, 1995.

De Gier JJ. Decision support tables for psychotropic medicines. In: Alcohol, Drugs and Traffic Safety - T97, Mercier-Guyon Ch, Ed. CERMT, Annecy, France, 1997, 1275-82.

De Gier JJ. Drugs and driving research: application of results by drug regulatory authorities. Hum Psychopharmacol Clin Exp, 1998;13:S133-6.

De Gier JJ. Survey on warning systems for medicinal drugs affecting driving performance. Institute for Human Psychopharmacology, University of Maastricht, The Netherlands, Tech Report DGC 98-02, 1998.

De Gier JJ. Review of investigations of prevalence of illicit drugs in road traffic in different European countries. In: Road Traffic and Drugs. Proceedings of a seminar organised by the Co-operation Group to Combat Drug Abuse and Illicit Trafficking in Drugs (Pompidou Group). Strasbourg, 19-21 April 1999. Council of Europe Publishing, 1999, 13-63.

Del Rio MC and Alvarez FJ. Prescribing medication for the driver. The role of health professionals, J Traffic Med 1995;23:123-8.

Directorate General for Energy and Transport, Report on drugs, medicines and driving. Directorate General for Energy and Transport, European Union, Brussels, 2002.

Grenez OE, Charlier CJ, Maes VA, Smet HC, Verstraete AG, Wennig RM, De Vrieze NE. Influence des médicaments sur la conduite d'une véhicule. Etude de la literature. Institute Belge pour la Sécurité Routière (IBSR) and the Toxicological Society of Belgium and Luxembourg (BLT) 1999.

Hemmelgarn B, Suissa S, Huang A, Boivin J-F, Pinard G. Benzodiazepine use and the risk of motor vehicle crash in the elderly. JAMA 1997;278:27-31.

Herings RMC. Geneesmiddelen als determinant van ongevallen [Medicinal drugs as determinants of accidents]. Utrecht University, The Netherlands, 1994.

Hindmarch I, Shamsi Z, Stanley N, Fairweather DB. A double-blind, placebo-controlled investigation of the effects of fexofenadine, loratidine and promethazine on cognitive and psychomotor function. Br J Clin Pharmacol 1999; 48: 200-206.

International Council on Alcohol Drugs and Traffic Safety (ICADTS) Working Group Report on Prescribing and Dispensing Guidelines for Medicinal Drugs that Affect Driving Performance, 2001. http://www.icadts.org/

ILO (International Labour Organisation). Management of alcohol- and drug-related issues in the workplace. An ILO Code of Practice. Geneva, International Labour Office, 1996.

Laar MW van, Volkerts ER, Wiligenberg APP van. Therapeutic effects and effects on actual driving performance of chronically administered buspirone and diazepam in anxious outpatients. J Clin Psychopharmacol 1992; 12: 86-95.

Louwerens JW, Gloerich ABM, De Vries G, Brookhuis KA and O'Hanlon JF. The relationship between drivers' blood alcohol concentration and actual driving performance during high speed travel. In: Alcohol, Drugs and Traffic Safety -T86, Rosbach R and Noordzij PC, Eds. Excerpta Medica, Amsterdam, The Netherlands, 1987, 183-7.

Neutel CI. Risk of traffic accident injury after a prescription for a benzodiazepine. Ann Epidemiol 1995;5:239-44.

Neutel CI. Benzodiazepine-related traffic accidents in young and elderly drivers. Hum Psychopharmacol Clin Exp, 1998;13:S115-23.

O'Hanlon JF, Ramaekers JG. Antihistamines and actual driving performance in a standard test: a summary of Dutch experience. Allergy 1995; 50: 234-242.

O'Hanlon JF, Vermeeren A, Uiterwijk MM, van Veggel LM, Swijgman HF. Anxiolytics' effects on the actual driving performance of patients and healthy volunteers in a standardized test. An integration of three studies. Neuropsychobiology 1995; 31: 81-88.

O'Hanlon JF. Ten ways for physicians to minimize the risk of patients causing traffic accidents while under the influence of prescribed medication. Primary Care Psychiatry 1995;1:77-85.

O'Hanlon JF, Robbe HWJ, Vermeeren A, Van Leeuwen C, Danjou PE. Velnlafaxine'S effects on healthy volunteers' driving, paychomotor, and vigilance performance during 15 day fixed and incremental dosing regimens. J Clin Psycho¬pharmacol 1998;18:212-21.

Parliament of Victoria, Road Safety Committee. Inquiry into the effects of drugs (other than alcohol) on road safety in Victoria. Victorian Government Printer, Australia, 1996.

Ramaekers JG, Swijgman HF, O'Hanlon JF. Effects of moclobemide and mianserin on highway driving, psychomotor performance and subjective parameters, relative to placebo. Psychopharmacol 1992; 106: 562-567.

Ramaekers JG, Muntjewerff ND, O'Hanlon JF. A comparative study of acute and subchronic effects of dothiepin, fluoxetine and placebo on psychomotor and actual driving performance. Br J Clin Pharmacol 1995; 39: 397-404.

Raemakers JG. Behavioural toxicity of medicinal drugs. Thesis, 1998. Maastricht University, The Netherlands.

Ramaekers JG. Antidepressants and driver impairment: empirical evidence from a standard on-the-road test. J Clin Psychiatry 2003; 64: 20-9.

Riedel WJ, Vermeeren A, Vuurman EF, Verhey FR, Jolles, J, Ramaekers JG, Mechanism of drug induced driving impairment: a dimensional approach. Hum. Psychopharmacol. Clin. Exp. 1998;13: S49-S63.

Robbe HWJ, O'Hanlon JF. Acute and subchronic effects of paroxetine and amitriptyline on actual driving, psychomotor performance and subjective assessments in healthy volunteers. Eur Neuropsychopharmacol 1995; 5: 35-42

Stout QF and De Gier JJ. Effect van de geel-zwarte rijvaardigheidssticker [Effect of the yellow-black driving ability sticker on medicines]. Pharm Wkbld 1982;117:449-55.

Van Mil JWF. Pharmaceutical care: the future of pharmacy. Dissertation, University of Groningen, The Netherlands, 2000.

Taylor J. Prescribed medication and driving. In: Medicinal aspects of fitness to drive. A guide for medical practitioners, Taylor JF, Ed. The Medical Commission on Accident Prevention, London, United Kingdom, 1995, 133-41.

Theunissen EL, Vermeeren A, Oers ACM van, Maris I van, Ramaekers JG. A dose-ranging study of the effects of mequitazine on actual driving, memory and psychomotor performance as compared to dexchlorpheniramine, cetirizine and placebo. Clin Exp Allergy 2004; 34: 250-8.

Vermeeren A, De Gier JJ and O'Hanlon JF. Methodological guidelines for experimental research on medicinal drugs affecting driving performance. Institute for Human Psychopharmacology, University of Maastricht, The Netherlands, 1993. Tech Report IHP 93-27.

Wolschrijn H, De Gier JJ and De Smet PAGM. Drugs and driving: a new categorization system for drugs affecting driving performance. Tech Report. Institute for Drugs, Safety and Behaviour. University of Limburg, The Netherlands, 1991

Appendix

A.1. DRUID prototype information and dissemination brochures

A.1.1. General Public

A.1.1.1. Brochure for the general public on medicines and driving

MEDICINES AND DRIVING

Some medicines can affect the ability to drive safely. This brochure informs you and provides tips.

Always check the information <on the medicine box> –country specific- <and> in the package insert.

Do not hesitate to ask your doctor and/or pharmacist if you have any questions.

How can medicines affect the ability to drive safely?

Some medicines (prescribed, over-the- counter and herbal medicines) can impair the ability to drive safely because they may cause a variety of reactions in your body.

Below you can see some of the possible side effects of medicines on your body which have an impairing effect on your ability to drive safely.

You should be aware of the following side effect:

- Drowsiness
- Difficulty in concentrating or remaining alert
- Blurred or double vision
- Dizziness
- Slow reactions
- Reduced coordination, feeling shaky
- Fainting, being lightheaded

You may not always notice that the medicine has affected your ability to drive safely. Not all people react in the same way and with the same intensity to the same medicine.

For this reason, whenever you start taking a new prescribed or over-the-counter medicine you should always ask your doctor or pharmacist if it is safe to drive while taking the medicine.

Groups of medicines that can impair the ability to drive safely

Several groups of medicines, either prescribed or over-the-counter, can impair the ability to drive safely.

Among these, the following are worth mentioning

- Hypnotics
- Anxiolytics
- Antipsychotic drugs (anti-schizophrenia drugs)
- Antidepressants
- Antiepileptic
- Antiparkinson drugs

- Analgesics
- Anaesthetics
- Stimulants
- Anti dementia drugs
- Antiallergic drugs
- Drugs for colds, coughs
- Some treatments for heart disorders

NOTICE that not all of them, even within the same therapeutic group, may impair the ability to drive safely to the same extent.

Always ask the advice of your doctor or pharmacist if you are taking any of these medicines.

Medicines and Driving: When to pay special attention?

When should you be especially vigilant?

- **Start of treatment or change of dose**: During the first few days of treatment, or when doses are increased, there is a higher likelihood of suffering these impairing effects on driving.

- **Polypharmacy**: Many patients, especially older people, take various medicines at the same time. The more medication you are using, the higher the risk there is of having negative effects on the ability to drive safely.

- **Alcohol**: As a rule never take alcohol (in any quantity) when taking medicines. Alcohol can potentiate the unwanted effects of medication on the central nervous system, increasing the risk of accidental injury.

Where can I find more information about medication and driving?

Country specific

- Look for this symbol on the packaging and consult the insert.

For further information you can visit the following sources:

- The Spanish Ministry of Health:
  http://www.msc.es
- Agencia Española de Medicamentos y Productos Sanitarios:
  http://www.agemed.es
- The DRUID project: Information on categorization and labelling for existing medicinal drugs at the European Union level.
  http://www.druid-project.eu.

Key point to remember

- Ask your doctor or pharmacist if it is safe to drive while taking the medicine.
- Read the package insert section dealing with the effect of the medicine on driving and using machines.
- Please avoid driving during the first few days after starting treatment or receiving increased doses.
- Use the medicine (dose and timing) as prescribed by your doctor/pharmacist.
- Monitor how you react to the medicine: Do you feel sleepy? Do you feel weak and slow? Do you have blurred vision?
- If the medicine you are taking affects your driving, stop driving. Do not stop taking your medicine without informing your doctor/pharmacist.
- Avoid drinking alcohol when taking medicines. It is best to drink no alcohol at all.

A.1.1.2. Brochure for the general public on illicit drugs and driving

Illicit drugs and driving

Who is driving, you or the illicit drugs?

Illicit drugs alter the normal functions of the brain and body, interfering with even the most skilled and experienced driver's ability to drive safely.

The "come down" effects after using drugs may also impair a person's driving ability.

If you intend to consume drugs, the safest option is not to drive.

How do illicit drugs affect driving?

The effects of illicit drugs on driving differ depending on how they affect the brain, how much they are used, how they are taken, how strong and pure the drugs are. Other factors, such as a person's mental and emotional state and physical health, can also influence the effects of illicit drugs.

There are many illicit drugs and they can act as a depressant, a stimulant or they may alter perceptions.

Cannabis (marihuana, hash):
Possible effects after smoking joints or bongs, or taking any form of cannabis

- Means you take longer to respond.
- Alters your distance and time perception.
- Lowers your concentration, coordination alertness and ability to react.
- Narrows or blurs your field vision.

Opiates (heroin, morphine, methadone), GHB and sedative/tranquillizer medicines:
Possible effects after using depressant drugs

- Reduces coordination and slows reaction times.
- Slows information processing ability, causes confusion and impaired thinking.
- Changes visual, auditory, time and space perception.

Cocaine, speed, ice, crystal meth, amphetamines or ecstasy:
Possible effects after using a stimulant

- Can cause you to become over-confidant when driving, which can result in your taking unnecessary and dangerous risks.
- They can lead to poor concentration, attention difficulties and a tendency to fidget. They can also cause a lack of coordination. and may make you feel disorientated.
- They can lead to aggressive and dangerous driving.
- They can cause drowsiness (the driver can fall asleep as the drug wears off).

LSD, ketamine, hallucinogenic fungi:
Possible effects after using a hallucinogen leads to

- Altered perception, such as seeing or hearing things that don't really exist, or that are distorted.
- Confusion, loss of self-control, loss of a sense of reality.

Mixing drugs

Mixing drugs/alcohol/medicines increases the effects even more and makes driving under the influence even more dangerous. So if you intend to use drugs/alcohol the safest option is not to drive.

What does the law say?

<Country specific>

<It is an offence to drive a motor vehicle whilst impaired through the use of illicit drugs and if found guilty you will be:

- Disqualified from driving.
- Fined.
- And even condemned to a prison sentence.>

Key points

- Driving under the influence of any illicit drugs is a serious accident risk. If you take drugs, do not drive.
- Mixing drugs/alcohol/medicines impairs even more your driving skills, so it becomes even more risky.
- Drugs impair the ability to drive safely. You can feel all right but: one thing is your perception of reality and reality itself quite another.
- Waiting for the effects to wear off is no solution. They can take a very long time to disappear.
- There is no such thing as safe drug taking. If you take drugs, do not drive.

Getting home safely

If you have taken any drug do not drive:

- Use a safe means of transport such as public transport or a taxi.
- Travel with someone you know has not taken any type of substance.

Where I can find information on illicit drugs and driving

Country specific

The DRUID project: information on illicit drugs and driving http://www.druid-project.eu

A.1.2. Drivers as patients

A.1.2.1. Brochure for patients using sleeping pills

What to know about sleeping pills?

You suffer from a sleep disorder

- Sleep is essential to our natural balance and health. There is nothing like a "normal" sleep.
- Everybody has his/her own rhythm and the length of sleep decreases naturally with age.
- If you have difficulties to fall asleep, if the duration of the sleep is much shorter or if the quality of your sleep has deteriorated, you suffer from a sleep disorder.
- Sleep disorders can induce drowsiness and increase fatigue at work and on the road BUT the use of sleeping pills can also induce risks.

What to do? Tips for a good sleep

- Go to sleep every day at the same time and wake up at the same hour
- Do some physical exercise during the day (e.g. 1/2-1 hour walk)
- Sleep in a cool room
- Avoid consumption of stimulants such as: coffee, tea, cola drinks...
- Avoid multiple naps during the day
- Do not watch television or stay on the internet too late as it stimulates your alertness

Benefits of sleeping pills

- Sleeping pills (hypnotics) help to fall asleep and to regulate sleep duration
- Sleeping pills affect you very fast (15-30 minutes after intake)
- You should only take such pills when you are lying down.

If the pill you have taken does not show any effect, do not take others.

Contact your doctor who will adapt your treatment.

Side effects of sleeping pills

Sleeping pills, as many other medicines, can lead to side effects. It is important to be aware of them. If side effects are severe or disturbing, inform your doctor.

- **Fairly common mild side effects**
  - Daytime sleepiness or reduced alertness
  - Difficulties with concentrating
  - Sensation of muscle weakness or fatigue
  - Confusion, dizziness
- **Rare mild side effects**
  - Headaches
  - Metallic taste
  - Nausea, vomiting

If uncomfortable effects occur, contact your doctor

- Driving a vehicle or performing any task requiring attention might be impaired until several hours after intake of sleeping pills.

- **If your sleeping pill is categorised as likely to produce severe effects on driving:**

    - Inform your doctor about your driving activities (e.g. professional driver or not; type of vehicle; how many km/ year; night driving…) and discuss possible alternatives (e.g. only daytime driving, avoid long distances, other modes of transportation). **You should not drive before having talked to your doctor**.
    - Follow the intake instructions and recommendations of your treating doctor. If he/she thinks you can drive, you can drive, and no further medical examination is mandatory.
    - Avoid any use of alcohol or other drugs during the treatment. Even a small dosage of alcohol increases the negative side effects on perception and concentration.
    - Do not combine with excessive doses of stimulants like coffee. This does not help to decrease the side effects.
    - Do not combine with any other medicine without asking your doctor's advice.
    - Check with your occupational medicine unit if your work activity should be adapted and/or if your employer should be informed.
    - Stop driving when you experience any side effect (sleepiness, decreased concentration …), also if it is not perceived by yourself but by your passengers.
    - In case of any doubt of side effects, inform your doctor.

Prolonged use of sleeping pills can lead to **addiction** and cause **memory loss**.
The use of sleeping pills should therefore be limited in time.

The combined use of sleeping pills and alcohol can lead to mental confusion and loss of self control and therefore to extremely dangerous behaviour.

But, do not interrupt your treatment by your own initiative.
Talk to your doctor who will guide you.

Only you can explain what you feel, and only your doctor knows how medicines are optimally used.

Cooperation is essential.

Write down the questions/topics you want to discuss with your doctor during your next consultation: ……..
…….

Your sleeping pill is:……..……

For more information:

<www.reseau-pic.com>

A.1.2.2. Brochure for patients using antidepressants

What to know about antidepressants?

You suffer from depression

- Depression is a disease that can affect everybody.
- Various reasons can cause depression and it can lead to a lot of suffering: losing the taste for life, feeling sad, tired, useless, abandoned and sometimes guilty for this state. It makes it difficult to continue your normal daily life...
- Depression decreases your performance. It can impair your ability to work and to concentrate on any task, including driving.

This disease must be treated seriously

Treatment can include antidepressant medications and psychotherapy.
Antidepressant medications treat symptoms and improve the mood.
They can also treat certain anxiety disorders and obsessive-compulsive disorder.

The benefits of antidepressants

- Your GP or psychiatrist/neurologist will select the most appropriate antidepressant for your condition (there are different types of depression and there are several types of antidepressant medicines).
- Antidepressants do not affect you immediately; they require a period of 2-3 weeks to be effective.
- Even if you do not feel the benefits immediately, **you should take your medication regularly without changing the prescribed dose.**

Never stop your treatment abruptly, even if you feel better. You may not be healed

Your doctor will help you to decide when and how to stop your treatment.

The average duration of depression treatment is 6-12 months.

Side effects of antidepressants

Modern antidepressants have generally little side effects compared to old ones. However you may experience some side effects, but mainly at the start of the treatment. Most side effects are not severe.

You should be aware of the side effects and inform your doctor when you experience them.

While starting the treatment: fairly common mild side effects

- Gastrointestinal disorders: nausea, vomiting, diarrhoea or constipation…
- Headache, vertigo, dizziness
- Dry mouth
- Transpiration
- Drowsiness or insomnia

Most of these effects diminish or disappear after a few days.
Be patient; do not stop your treatment.

Rare side effects

- Sexual dysfunction
- Difficulty urinating
- Tremor
- Rash, itching
- Agitation, irritability or aggressive feeling

Contact your doctor.
He/she will adapt your treatment.

What you should know about driving during your treatment…

If your antidepressant is categorised as **likely to produce moderate adverse effects** on driving:

- Inform your doctor about your driving activities (e.g. professional driver or not; type of vehicle; how many km/ year; night driving…) and discuss possible alternatives (e.g. only daytime driving, avoid long distances, other modes of transportation).
- Follow the intake instructions and recommendations of your treating doctor. If he/she thinks you can drive, you can drive, and no further medical examination is mandatory.
- Avoid driving during the first days of the treatment, when doses are increased or when changes in the medicine are prescribed; check if side effects occur.
- Be very careful while driving and avoid long distance and night driving.
- Avoid any use of alcohol or other drugs during the treatment. Even a small dosage of alcohol increases the negative side effects on perception and concentration.
- Do not combine with excessive doses of stimulants like coffee. This does not help to decrease the side effects.
- Do not combine with any other medicine without asking your doctor's advice.
- Check with your occupational medicine unit if your work activity should be adapted and/or if your employer should be informed.
- Stop driving when you experience any side effect (sleepiness, decreased concentration …), also if it is not perceived by yourself but by your passengers.
- In case of any doubt of side effects, inform your doctor.

Only you can explain what you feel, and only your doctor knows how medicines are optimally used.

Cooperation is essential.

Write down the questions/topics you want to discuss with your doctor during your next consultation: ……..
…….

Your antidepressant medicine is: ……..……

For more information:

<www.reseau-pic.com>

A.1.2.3. Brochure for senior drivers

What to know about fitness to drive of elderly patients?

Decreasing fitness to drive

The fitness to drive naturally decreases with old age. Longer reaction time, slower decision making or fatigue are typical examples of impaired driving performance in old age.

Compensation is possible

Your driving experience and adaptations in your driving habits can compensate for these impairments (e.g. reduced speed or no driving in rush hours or on busy roads).
As long as you have the feeling that you can compensate for impairments you should keep driving regularly. Occasional drivers have a higher risk of accidents.

Decrease your risk by improving your fitness to drive

- Check your vision, have new glasses if necessary.
- Check your hearing.
- Attend a driving school session (your driving test was long time ago, and regulation might have changed).

DO YOU KNOW that…?

Among <9000><country specific> different medicines available in France, <1500-1700> <country specific> can induce side effects which impair the fitness to drive:

- The most used medications which are impairing the fitness to drive are: tranquillisers, sleeping pills, antidepressants, cardiac treatments, cold and cough medicines, painkillers.
- The most frequent side effects of these medicines are: drowsiness and effects on vigilance, but they can also affect vision, coordination and behaviour.
- A sleeping pill can affect you for about 12 hours!
- Even a small amount of alcohol can increase effects of medicines on driving performance.

Never stop your treatment abruptly.

Your doctor will help you to decide when and how to stop or adapt your treatment.

If you have any doubt about the effects of your medications on your fitness to drive

Ask your doctor or your pharmacist, if the medication can impair your driving performance.

The doctor and the pharmacist have the duty to give you clear and complete information.

Many diseases require a pharmacological treatment. Medicines can improve your fitness to drive as they allow controlling your disease or the symptom. However, the same medicines can also produce some side effects that can impair your fitness to drive. For that reason you should always be alert and consult your doctor and/or pharmacist.

Always follow the prescribed dose and keep informed about interactions with other medicines that you take.

Medicines "over the counter", have they also side effects on driving?

Your medicine is categorised in terms of negative effects on driving.

<Look for the pictogram on the box of your medicine:>

- < country specific> A yellow triangle (**level 1**) means that you should read the information in the package insert and take care of possible side effects like drowsiness, vision disturbance or any other impairment.
- An orange triangle (**level 2**) means that you should inform and discuss with your doctor your driving activities and possible alternatives (professional or not, car, motorcycle or other vehicles, how many km/ year, special condition as night driving, and, of course, alternative modes of transportation you can use). You are allowed to drive, after following those recommendations.
- A red triangle (**level 3**) means that you can not drive before having asked your doctor's opinion.
- Some medical treatments require an evaluation by a medical authority of your disease and its treatment (e.g. epilepsy, diabetes). Furthermore, even if you are legally allowed to drive, you always remain responsible for your fitness to drive. You should follow the opinion of your doctor and his/her recommendation.
- Avoid driving during the first days of the treatment, when doses are increased or when changes in the medicine prescribed, and check if side effects occur.
- Be very careful while driving and avoid long distances and night driving.
- Avoid any alcohol or other drugs during the treatment and do not combine with excessive doses of stimulants like coffee.
- Do not combine with any other medicine without asking your doctor's advice.

Most side effects decrease or disappear after a few days. Be patient; do not stop your treatment.

Only you can explain what you feel, and only your doctor knows how medicines are optimally used.

Cooperation is essential.

Write down questions/topics you want to discuss with your doctor during your next consultation: ……
……...

Your medicine is: ……..……

For more information:

<www.reseau-pic.com>

A.1.3. Younger drivers

A.1.3.1. Brochure for young people on illicit drugs and driving

DRUGS LEAD YOU TO DEATH, DO YOU HAVE TO DRIVE THERE?

OR

BE CLEVER

DRIVING AND DRUGS: NEVER!

IF YOU INTEND TO USE DRUGS, DO NOT DRIVE!

Illicit drugs affect the normal functions of the brain and body, interfering with even the most skilled and experienced driver's ability to drive safely.

Drugs can affect you in many different ways:

Cannabis :
- Slows down your reaction time
- Changes your perception of time and distance
- Lowers your concentration and coordination
- Blurs your vision

Stimulants like cocaine, speed and XTC:
- Make you feel over-confident, which can result in taking unnecessary and dangerous risks
- It can make you feel drowsy, and even make you fall asleep as the drug wears off
- Lowers your concentration and coordination

Depressants like heroine, morphine and GHB:
- Slows down your reaction time
- Changes perception of time and distance
- Slows down your information processing ability

Your driving ability is impaired not only during the 'high', but also during the 'crash' phase when the drug wears off. So the negative effect can last up to 24 hours.

What to do when you have used drugs or if you plan to use drugs:
- use public transportation
- assign a designated driver
- before you leave, plan how to get back home safely

It is well known that alcohol increases the chance of being involved in an accident.
With 0.5 ‰ alcohol in your blood (=2 drinks) the chance to have an accident increases by two, with 0.8 ‰ the risk is even 5 times as big.

Drugs are even more dangerous!

<<Insert DRUID WP2 + literature results when available>>
….
….
….

When combining drugs and alcohol, the risk is enormous!

<<Insert DRUID WP2 + literature results when available>>
….
…..
…..

In France, each year 100 fatal crashes per year are attributable to cannabis use. (<< To be updated with DRUID information when available>>)

If applicable, references to other aspects of the campaign could be mentioned here.
E.g. if a website is made for this campaign

Enforcement

(country-specific)

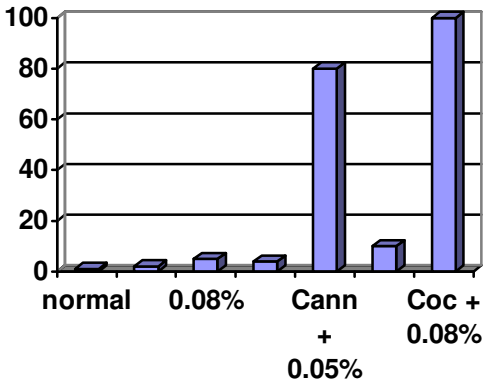
Just like for alcohol, the police can control if you are driving under the influence of illicit drugs.

Insert Road-side procedure
….
….
….
….

If you get caught, the consequences are severe:
Insert punishments
….
….
….
….

Did you know?

- Drugs have an equal or even bigger influence on your driving skills than alcohol?
- When you combine drugs and alcohol, the risk of crashing is even bigger?
- The police can test if you have used drugs by using a rapid saliva test?
- If you get caught, you loose your license, get fined and can even be sent to prison?



The picture above indicates the relative risk of certain substances, especially the risk of alcohol, cannabis and combination of both, since these are the most prevalent substances used.
(The numbers shown are only indicative, and could be adapted once data from WP2 is completed.)

A.1.4. Physicians and Pharmacists

A.1.4.1. Brochure for physicians and pharmacists

Introduction

About 10 percent of all road-users take medicines, which affect their driving ability. Although they are generally well informed about the risks involved in driving while medicated, more than 50 percent does not adjust their driving behaviour.

As a GP, specialist, occupational physician or pharmacist you have an important role and the responsibility to inform the patient about the influence that medicines can have on one's driving ability. In practice this can lead to problems and questions. What is the extent of these responsibilities? Is there enough information at hand? Are there any alternatives in medicine or time of use? What kind of information is available in writing? Do professional drivers require specific advice or information?

This brochure offers you current information on medicines that are hazardous in traffic. Also legal issues are discussed and some supporting tools for professionals are mentioned.

The risk of accident involvement after using impairing medicines

Benzodiazepines (BZs) are the most extensively studied medicines regarding risk assessment in traffic. Particularly long half-life BZs, in higher therapeutic doses and/or at the start of treatment are most likely to cause an increase in crash risk. For other frequently used medicines, such as sedative antidepressants and sedative antihistamines, similar risk estimates have been reported, although less extensively studied than the BZs.

Categorization system

In general patients read about their medicine that may affect their driving ability in the package insert (or leaflet) or receive verbal information provided by their physician or pharmacist. However the effect of different medicines on driving ability may vary, due to different pharmacodynamic and pharmacokinetic properties. For this reason medicines that is hazardous in traffic is divided in four categories (see following Table). This categorization is a result of a European Project DRUID (DRriving Under the Influence of Drugs, alcohol and medicines), which enables a European wide application of the same categories.

The four categories are assigned to medicines based on reviewing various sources of information. In general these categories relate to the (acute) effect of the medicines at the start of the treatment. For a limited number of, but most frequently used, psychotropic medicines (particularly BZs and antidepressants), this effect is determined in a standard driving test, in which weaving of the car in the traffic lane is recorded when the driver is medicated. In this test the medicine is used in a normal, therapeutic dose for adults. Additional information from performances studies under laboratory conditions is used to complete the data set used for categorizing the medicines. Furthermore information on the profile of side effects and their frequency, as well as the pharmacokinetic and pharmacodinamic data are used in the categorization of the medicines on driving.

Warning levels for patients have been derived from the categories and will be used in package inserts or package leaflets and in the labelling of medicines (only when mandatory in a particular country).

Table. DRUID Categorization system

Information for physicians and pharmacists		**Warning for patients** <with warning symbols and standard descriptions per country>
Description of categories with levels of impairment	**Information on how to advise their patients**	
Category 0 Presumed to be safe or unlikely to produce an effect on fitness to drive.	Confirm that the medicine will be safe for driving, provided that combinations with alcohol and other psychotropic medicines are excluded.	[no warning needed]
Category 1 Likely to produce minor adverse effects on fitness to drive.	Inform the patient that impairing side effects may occur especially during the first days and that have a negative influence on his/her driving ability. Give the patient the advice not to drive if these side effects occur.	**Warning level 1** Do not drive without having read the relevant section on driving impairment in the package insert.
Category 2 Likely to produce moderate adverse effect on fitness to drive.	Inform the patient about the possible impairing side effects and the negative influence on his/her driving ability. Advise the patient not to drive during the first few days of the treatment. If possible prescribe a safer medicine, if acceptable by the patient.	**Warning level 2** Do not drive without advice of a health care professional. Read the relevant sections on driving impairment in the package insert before consulting the physician or pharmacist
Category 3 Likely to produce severe effects on fitness to drive or presumed to be potentially dangerous.	Inform the patient about the possible impairing side effects and the negative influence on his/her driving ability. Urgently advise the patient not to drive. Consider prescribing a safer medicine, if acceptable by the patient.	**Warning level 3** Do not drive. Seek medical advice after a period of treatment about the conditions to restart driving again.

General advice for applying the categories

If possible choose a medicine in category 1 (likely to produce minor adverse effects on driving ability) or a medicine that has no effect on driving performance related skills. This is even more important if the patient uses his car (or another motorized vehicle) more frequently (e.g. professional drivers).

Circumstances that can also determine the influence on the driving ability like starting or stopping a medicine, adjusting the dose or time of use during the day should be taken into account.

Advice for the health care professionals

Any prescription for a patient will be the result of considering clinical needs and the risk-benefit ratio of treatment. In case psychotropic medicines are prescribed some extra attention is needed. In order to allow a selection of the best possible choice of medicines for a patient as driver, the following five-step approach is recommended.

Five step approach:

1. Assess the clinical history. Is the patient a driver?.
2. Select the medicine which has the least impairing on psychomotor performance.
3. Assess the factors that influence the effect a medicinal drug can have on ability to drive.
4. Choose the most adequate prescribing pattern.
5. Inform patients and their families.

It is important to provide both verbal and written information about the influence of a medicine on a patient's ability to drive. When doing so you must consider the following:

- Advise not to combine psychotropic medicines with the use of alcohol, because this may increase the effect on the patient's reaction ability.

- Check whether the patient is willing to follow the treatment plan and if he thinks he is able to, discuss alternative treatments with the patient.

- Advise the patient to be aware of possible side effects, such as drowsiness, dizziness or sleepiness in the first period of treatment. If these side effects occur the patient should not drive.

- Advise the patient not to drive for a long period of time (not more than 2 hours). The patient could also take a passenger along to check for signs of unusual driving behaviour.

Alternatives

In case a medicine causes problems with the patient's driving ability, there are a few possible alternatives at hand.

- If possible prescribe a similar medicine with little or no influence on the patient's driving ability
- Advise the patient not to drive in the first period of medicine use. For example in case of clomipramin the patient should not drive in the first week.
- Adjust the dose of the medicine. For example in case of amitriptylin the advice changes to a more strict advice if the dose is higher than 75 mg a day.
- Advise the patient to take his medicine at night.
- Avoid combinations with other medicines that might influence a patient's driving ability. If combined, they may have a greater influence than separately.
- Consider non-medical advice (about meals, drinking before going to sleep, etc). This is especially a good advice in case of sleep-medicines (benzodiazepines).

Professional drivers

Professional drivers, who take part in traffic for longer periods of time, may be responsible for passengers and may be at risk because they often drive large vehicles. Therefore it is very important to underline the risks involved when driving under the influence of medicines. The GP can advise the patient to contact his occupational physician for advice and to make special working arrangements.

Sources of information

<In this section the sources of information that are available nationally could be summarized>

Legal aspects

What legal aspects concern you as doctor or pharmacist?

<In this section the existing relevant legal provisions can be summarized, for example the Road Traffic Act, a Medical Treatment Act and regulations on driver requirements for holding a driving licence.

The first might review the legal issues for a driver who is under the influence of a psychotropic medicine.

The second might involve both the GP and pharmacist. They have the obligation to inform the patient about the possible side effects of the prescribed medicines and the possible alternatives. The influence on a patient's ability to drive is one of these side effects. A doctor or pharmacist is accountable if he does not give this information. If the patient has received the information about how the medicine may affect his driving abilities, it is his own responsibility when he decides to drive. The doctor or pharmacist has no responsibility when a well informed patient takes part in traffic.

The last might address the case of certain disorders that could influence driving ability itself, for example in case of epilepsy.

The driving licensing authority judges a driver's physical and mental ability to drive a motorized vehicle in accordance to ministerial requirements. These requirements are listed in the national regulations, and can probably be downloaded from country specific website.>

Documenting the decision-making process

In case you are working with patients at risk for litigation documentation of the decision-making process is strongly advised. Specifically related to your responsibilities and possible penal proceedings in the event of accidents occurring after a positive decision from your side that driving is possible in a responsible manner. You can manage that risk by documenting not only what was done in assessing fitness to drive and instructing the patient, but also the assessment of the patient's decision-making competence, patient's understanding of impairing properties of the medicine.

It is also advised to document the careful weighing by yourself and patient of the risks and benefits of alternative courses of action to achieve fitness to drive, for example a change in medicines by selecting less impairing medicines and / or discussing instructions how to take the medicine in the most appropriate way in order to avoid the possible impairing effect.

Legal provisions instruct doctors to document their decisions in a patient record. The decision whether or not to drive remains at the patient who is well advised.

Documentation is advised of the following items:

1. Tests done and / or information gathered in assessing fitness to drive
2. Assessment of patient's decision-making competence based on advices given
3. Patient's understanding of impairing properties of the medicine
4. Specific interventions (changes in medicine or instructions for use)
5. Follow up visit for evaluation of interventions (advices given, self-assessment of patient)

Fact Sheets on Medicines & Driving

There is a source of information on specific medicines within a therapeutic class that have an effect on driving ability. The website for this information is: <www…….>

In general information will be provided with respect to the following issues:

- Relevant studies on the effects on psychomotor performance and risk studies
- The categorization assigned to the medicine, if possible depending upon dosage, dosing schedule, time after administration and route of administration (e.g. for hypnotics)
- Advices to the patient which should include information about:
  - The extent to which the medicine has an influence on the driving ability: minor, moderate or major.
  - Whether the advice is not to drive, and for how long.
  - Safe alternatives for driving (if possible)
  - The most important side effects that may influence driving ability.

<The information provided in the fact sheets is also made available in the software packages…….and…….For more information please contact your software supplier.>

Advice per medicine

The information is available for the following drug classes:

<selection of drug classes to be decided nationally>

- <Benzodiazepines
- Antidepressants
- Antihistamines
- Amphetamines
- Antiepileptics
- Antipsychotics
- Parkison's medicines
- Opioids>

Package insert or package leaflet

Be aware that the advice in the package insert can be less specific than the advice in the fact sheets. Especially if you refer to the section on driving impairment and the information is vague or illogical, you need to explain that this problem is caused by the lack of information on the categorization in older package inserts, and that this will be improved for newer ones in the future.

<National Agreement between physicians and pharmacists organizations>

<When do you give what type of advice to the patient? And what is the task of the doctor and pharmacist? All this is described in the National Agreement by the national pharmacists and physicians organizations. This document advises doctors and pharmacists to give the patient both verbal and written information about risks of medicines that may affect driving ability at the first and second dispensing. Besides this the document gives advice about adjusting the information to the needs of each individual patient.

It is recommended to discuss the activities at a joint local meeting with physicians and pharmacists.

Points of interest are:

Who gives what kind of information to the patient?

Does the pharmacist discuss the influence of the medicine if a medicine is repeated, or is this the task of the doctor?

When does the pharmacist contact the doctor about a safer alternative?

The document can be obtained from ….. and can be downloaded at www……..>.

<Training of specific groups, such as pharmacy technicians>

<The pharmacy technician has a crucial part in providing the patient with the information about medicine use and traffic safety to. The training "Medicine and Traffic Safety" gives the pharmacist-assistant the opportunity to put this advice in practice. For more information: www…….>

<Training of occupational physicians>

<The training "medicine, work and driving ability" has been renewed for the occupational physician and adapted to the most recent knowledge about this topic. You can sign up for this training at ……, see www…….>

Patient information

A new brochure to inform the patient has been developed by <……..>. This brochure can be provided by the GP or at the community pharmacy. The patient brochure can be downloaded at www……For ordering the brochure please contact <……> or order by their website www…….

A.2. An example of a DRUID fact sheet

WP4 CLASSIFICATION

FACT SHEET

Filename: N07AA02-PYRIDOSTIGMINE.doc
Date of first version: 8-May-2009
Date of reviewed version if appropriate:

N07AA02-PYRIDOSTIGMINE

Source of information:

SPC from web
http://www.emc.medicines.org.uk/. Downloaded 8 May 2009**.** Date of first authorisation 1st March 1998. Last renewal May 2007.

Presentations:

60 mg oral tablets. Oral administration.

Indications:

Myasthenia gravis; paralytic ileus; post-operative urinary retention.

Posology and method of administration:

Myasthenia gravis
Adults: Doses of 30 to 120mg are given at intervals throughout the day when maximum strength is needed (for example, on rising and before mealtimes). The usual duration of action of a dose is 3 to 4 hours in the daytime but a longer effect (6 hours) is often obtained with a dose taken on retiring for bed. The total daily dose is usually in the range of 5 – 20 tablets but doses higher than these may be needed by some patients.

Other indications
Adults: The usual dose is 1 to 4 tablets (60 – 240mg).

Pharmacodynamic properties:

Pyridostigmine bromide is an antagonist to cholinesterase, the enzyme which normally destroys acetylcholine. The action of Pyridostigmine bromide can briefly be described, therefore, as the potentiation of naturally occurring acetylcholine. Pyridostigmine bromide has a more prolonged action than neostigmine although it is somewhat slower to take effect (generally taking 30 – 60 minutes). Because it has a weaker "muscarinic" action than neostigmine, it is usually much better tolerated by myasthenic patients in whom the longer action is also an advantage.

Pharmacokinetics properties:

Oral pyridostigmine is poorly absorbed. Maximum plasma concentrations occur at 1 to 2 hours and it is eliminated by the kidney largely unchanged with a half-life of 3 to 4 hours.

Possible side effects related to driving:

Not classified in SPC like Very common side effects (>10%) or Common side effects (> 1% - 10%). None Side-effects related to driving.

These may include nausea and vomiting, increased salivation, diarrhoea and abdominal cramps.

SPC section 4.7 Effects on ability to drive and use machines:

"None known".

Leaflet section on driving: Driving and using machines:

None date in the leaflet.

Studies on Psychomotor performance and risk studies:

1. Barber JA, Boll P, Burton RR, Forster EM, Parker FR Jr, Whinnery JE. Effect of pyridostigmine bromide on acceleration tolerance and performance. Aviat. Space Environ Med. 1994; 65(2):110-6.

Pyridostigmine Bromide (PB) is used as a pre-exposure antidote for the prevention of potentially lethal effects of certain chemical warfare nerve agents by reversibly inhibiting acetylcholinesterase (AChE). This study was designed to determine whether PB has any deleterious effects on acceleration tolerance (+Gz) or performance. Double-blind placebo trials were conducted to evaluate the effects of PB (90 mg) per day on +Gz tolerances and performance. Three types of exposures were used: 1) gradual onset rate (GOR) exposures of 0.1 G/s; 2) a series of rapid onset rate (ROR) exposures of 6.0 G/s; and 3) a simulated aerial combat maneuver (SACM) of 4.5 to 9.0 +Gz. Performance tasks included the Unified Tri-Service Cognitive Performance Assessment Battery (UTC-PAB). The subjects were not able to correlate their symptoms with PB, placebo, or the acceleration exposure itself. Plasma PB individual levels ranged between 6 and 31 ng/ml and AChE levels of inhibition had a range of 12 to 45%. There were no significant effects on +Gz tolerance or performance related to PB. Based on the results of this study, PB does not significantly alter +Gz tolerance or performance. Therefore, we do not expect aircrew taking prophylactic doses of PB to be adversely affected during aerial combat operations.

2. Arad M, Arnon R, Epstein Y, Moran D, Varssano D, Vazina A. Effects of heat-exercise stress, NBC clothing, and pyridostigmine treatment on psychomotor and subjective measures of performance. Mil Med. 1992; 157(4):210-4.

This study investigated the effects of pyridostigmine pretreatment, NBC protective gear, and heat-exercise exposure on psychomotor performance and subjective sensations in eight healthy male volunteers. Exercise in heat enhanced performance of vertical addition (+7.3%, p less than 0.001) but prolonged the reaction time (+4.4%, p less than 0.01). The effects of pyridostigmine, protective gear, and the interactions between the various stressors were not significant. Cognitive performance was not dependent on body core temperature. Multiple complaints of subjective discomfort arose from wearing the protective garment. The results suggest the existence of a significant subjective discomfort but an absence of major cognitive decrements in a multiple-stresses state of chemical warfare alertness.

3. Almog S, Avgar D, Izraeli S, Ribak J, Shochat I, Tamir A, Tochner Z. The effect of repeated doses of 30 mg pyridostigmine bromide on pilot performance in an A-4 flight simulator. Aviat Space Environ Med. 1990 May; 61(5):430-2.

The effect of repeated doses of 30 mg pyridostigmine bromide every 8 h on flight skills in an A-4 simulator was tested in this crossover double-blind placebo-controlled study on 10 pilots experienced in actual and simulated A-4 flights. The pilots flew two test simulator flights 2 h after the fourth dose of pyridostigmine or placebo. The flight profile included navigation, rapid ascent, 360 degrees turns, and instrument landing. Each flight lasted approximately 20 min. Flight parameters measured included indicated air speed, true heading, barometric altitude, vertical velocity, and bank. The mean whole blood cholinesterase inhibition level was 29%. There was no decrement in performance under treatment with pyridostigmine in the percent of deviation time from the prescribed limits or in the average duration or magnitude of the deviation in each of the flight parameters. We conclude that pyridostigmine bromide in repeated doses of 30 mg every 8 h does not appear to influence pilot

performance during short A-4 missions.

4. Ball JF, Gawron VJ, Miller JC, Schiflett SG, Slater T. Effects of pyridostigmine bromide on in-flight aircrew performance. Hum Factors. 1990; 32(1):79-94.

The effects of a chemical defense pretreatment drug, pyridostigmine bromide (PB), on in-flight aircrew performance were assessed using the Total In-Flight Simulator (TIFS) aircraft. TIFS was used to supply appropriate control dynamics, handling characteristics, and cockpit instrumentation for a tactical transport airdrop simulation. Twenty-one C-130 pilots flew two familiarization and four data flights. During two data flights PB was given to both members of the aircrew using the dosage regimen of 30 mg/8 h prescribed by the U.S. Air Force surgeon general. The drug was administered using a double-blind technique. The results indicated that (1) aircrews successfully completed their assigned mission,(2) airdrop inaccuracies and navigation errors in time and distance were not specifically related to PB, (3) performance and crew coordination were not affected by PB, (4) PB and pilot/copilot not discriminate beyond chance between PB and placebo conditions.

Categorization in some EU countries and proposed categorization:

Not categorization in any country

ICADTS	France II, III	Spain I, II	Portugal	Belgium	The Netherlands

Greece: no indication about influence on driving.

Proposal of categorization:

II

Proposed labelling:

II

Information for the patient:

- Advise the patient (and explain to caregivers) not to drive during the first days of treatment.
- The treatment can impair patient's vision especially by night.

Place and date of agreement by the WP4 members:

Approved in the Cologne meeting the 29th September 2009.

A.3. Knowledge test (based on example from the Netherlands)

1. Most consumers - users and non-users of medicines that might impair driving abilities - are aware of the potentially negative effects of medicinal drugs in traffic.

□ True □ False

2. Half of the users of medicines that might impair driving abilities will change their behaviour in response to the information that they have received about the potential dangers of their medicine use in traffic.

□ True □ False

3. GPs and pharmacists are obliged to inform the patient about the possible negative effects of his or her medications on driving abilities.

□ True □ False

4. A patient, who uses a drug of category 3, can safely drive a car one week after the use of his/her medication, if he does not note (any more) any adverse effects (on his driving behaviour)

□ True □ False

5. A patient can be punished with criminal sanctions if he drives while using a category 2 or 3 medicine whereas the health care provider has advised him not to drive.

□ True □ False

6. As a GP you are obliged to inform the Driving Licensing Authority that your patient is using if this latter uses a category 2 or 3 drug, in order to give the CBR the possibility to perform a check-up.

□ True □ False

7. The patient information leaflet provides the patients enough information about the effects of medicines on driving abilities.

□ True □ False

Explanation knowledge test (answers in red reflect the Dutch answers)

1. Most consumers - users and non-users of medicines that might impair driving abilities - are aware of the potentially negative effects of medicinal drugs in traffic.

True: The Dutch NIVEL study (Vervloet et al, 2007) shows that more than 90% of the consumers (users and non-users) are aware of the effects of medicines on driving abilities. Overall, the majority of people mention the right medicines that might impair driving abilities: hypnotics, tranquillizers and antidepressants.

2. Half of the users of medicines that might impair driving abilities will change their behaviour in response to information that they have received about the potential dangers of their medicine use in traffic.

False: The NIVEL study (Vervloet et al, 2007) shows that more than 84% of the users do not change their behaviour in response to the information that they have received. They mention, as a possible explanation, the fact that they have experienced no adverse effects on their driving skills. This shows that it is not sufficient to simply inform the patient about the possible negative effects of medicines on driving abilities. The provision of medicine-specific information and the prescription of a medicine that is less impairing seem to be important factors.

3. GPs and pharmacists are obliged to inform the patient about the possible negative effects of his or her medications on driving abilities.

True: In terms of responsibilities and tasks concerning the provision of information materials to patients, the GP and pharmacist fall under the “Law on Medical Treatment Agreement” (WGBO), and thus have the obligation to inform the patient about the possible side effects of prescribed medicines and possible alternatives. If these details are not provided, it means that the GP and pharmacist are at fault. If the patient has received these details, he/she is responsible for the decision to drive or not to drive. The GP or the pharmacist is not liable for the decision that the patient takes on the basis of the recommendations that have been given.

4. A patient, who uses a drug of category 3, can safely drive a car one week after the use of his/her medication, if he does not note (any more) any adverse effects (on his driving behaviour)

False: Medicines that belong to category 3 have serious or potentially dangerous effects on the fitness to drive. In case of use of medicines from this category, it is recommended to strongly advice the patient not to drive. As for the medicines that belong to category 2, it is known that they have a minor to moderate negative impact on the fitness to drive. Patients, who use medicines from this category, may start driving again a couple of days after the beginning of their therapy, if they do not experience (any more) adverse effects on their reaction abilities.

The prescribing and dispensing guidelines in this training manual explain that in case of use of certain medicines that belong to category 3, it is strongly recommended not to drive only during the first week of treatment or it is indicated how long it is necessary to wait before starting to drive again.

5. A patient can be punished with criminal sanctions if he drives while using a category 2 or 3 medicine whereas the health care provider has advised him not to drive.

True: According to Article 8 of the Traffic Act (Wegenverkeerswet, 1994), people cannot drive any vehicle in case they are operating under the influence of a drug of which they know or reasonably should know that it might reduce their driving abilities. However, the fact itself that it is only known that the active substance can impair the fitness to drive cannot be considered as a proof that the driver was operating under such a negative influence that he/she could not be considered to be in proper control of his/her driving abilities. The actual impact of the substance has to be established by experts(Moss, 2000).

6. As a GP you are obliged to inform the Driving Licensing Authority (DLA) that your patient is using if this latter uses a category 2 or 3 drug, in order to give the DLA the possibility to perform a check-up.

False: Due to the bound of professional secrecy, physicians can proceed with such a notification only in case of emergency. Generally speaking, the physician needs an explicit consent of his/her patient in order to be authorized to report confidential details to third parties, such as the DLA. Only in case of danger for the patient and other drivers, the physician can deliberate to report the fact without the patient's consent (Doppegieter, 2004).

If someone applies for the first time for a driving license, the applicant must fill in an "Own Declaration" ("Eigen Verklaring") form in which health problems are reported. Considering this statement as well, the medical advisor of the DLA decides whether the subject is suitable drive a motor vehicle. In case of renewal of a driving license that belongs to people who are seventy years old or older than seventy years, a new "Own Declaration" needs to be filled in. People who, during this time frame, show health problems which may affect their fitness to drive or who need to use medicines which affect their driving skills, are kindly requested to voluntarily fill in a new "Own Declaration", and to send it to the DLA for the re-evaluation of their authorization to drive. It is possible that the DLA decides that the patient is still able to drive. If this is the case, the patient will receive a note on his/her license. In The Netherlands there is no obligation to report this type of details.

Until a medical examination has been accomplished, the DLA can also take its final decision concerning the fitness to drive on the basis of a specific report such as, for example, a police report, or on the basis of data that has been derived from physicians' files.

7. The patient information leaflet provides the patients enough information about the effects of medicines on driving abilities.

False: Patients can find information on the impact of their medicine on the fitness to drive in the package leaflet. A research of the "Nederlands instituut voor onderzoek van de gezondheidszorg" (Nivel) shows that people who use medicines that might impair driving abilities drive as frequently as people who do not use these drugs (Vervloet et al, 2007). The information that is reported in the leaflet also seems to be insufficient to persuade people to adapt their driving behaviour.

.

A.4. Case studies (example from the Netherlands)

Case Studies for GPs

The location and the time in which the case details appear, may vary from system to system. However, the information content is the same.

Instructions for completing the case:

- Conduct the case study individually.
- Do not read the whole case before you start. Answer first the questions on page .., after that those on page .., and so on. No forward reading.
- In this case, there are different worksheets for general practitioners and pharmacists. Make sure you have the right worksheet.

Mr. Jones has an appointment during your consultation hours. He is 58 years old, he is a teacher, and widower since two years. After the death of his wife, he could manage relatively well, but now you are surprised about the way he looks like: it seems that he cares less about himself, he looks thinner, and he gives you an negative feeling. He tells you that he increasingly suffers from insomnia. Because he absolutely cannot handle his work any more, one week ago he declared he was sick. After asking him some questions, it turns out that, in the last six months, he lost four kilograms. He says he is not anxious. Physical examination does not provide any further details. He does not use any medicines.

You establish a diagnosis of depression, and give Mr. Jones non-medical advice. In agreement with Mr. Jones you decide to treat him with an antidepressant as well. You choose paroxetine, 20 mg, once a day. Because Mr. Jones also asks for a hypnotic drug to treat his sleepless nights, you decide to write a single prescription for ten tablets of zolpidem 10 mg.

When entering paroxetine in your computer-system, the following text will appear on your screen (in red example of information from the Dutch database):

This medicine has minor influence on driving skills (category I). It is comparable to a blood alcohol concentration of < 0.5 g/l (< 0.5 ‰). This is valid in case of a dosage UP TO AND INCLUDING 20 mg once a day.

At a dosage HIGHER THAN 20 mg once a day or in combination with other medicines that might influence reaction skills, it is not possible to keep category I.

The recommendation to drive or not to drive depends on the medicine and on the disease, as well. In some cases, an ability to drive declaration can be necessary: see legal aspects below.

Recommendations
First prescription:

- Start with the lowest dose.
- Advise the patient that, during the first days of treatment, side effects such as drowsiness, dizziness, fatigue and impaired vision may occur.
- Advise the patient that he/she should not drive as long these side effects occur.

When entering zolpidem in your computer-system, the following text will appear on your screen (in red example of information from the Dutch database):

This drug has a severe or potentially dangerous influence on driving skills (Category III). It is comparable with a blood alcohol concentration of > 0.8 g/l (> 0.8 ‰). This is valid in case of a dosage UP TO AND INCLUDING 10 mg at the night and UP TO AND INCLUDING 8 hours after the medicine intake. FROM 8 hours after the intake, this medicine has no or minor negative impact on driving ability (Category I). In case of a dosage HIGHER THAN 10 mg or in combination with other medicines, it is not possible to refer to this categorization.

Recommendations
First prescription:

- Start with the lowest dose

Occasional use:

- Dosage UP TO AND INCLUDING 10 mg at night: the patient can drive his/her car 8 hours after the medicine intake. It is safe to drive 8 hours after the medicine intake.
- Dosage HIGHER THAN 10 mg at night: advise the patient to drive his/her car 24 hours after the medicine intake.

Chronic use:

- Dosage UP TO AND INCLUDING 10 mg at night: advise the patient to drive his/her car 8 hours after the medicine intake. It is safe to drive 8 hours after the medicine intake.
- Dosage HIGHER THAN 10 mg at night: advise the patient not to drive.
- Inform patients about possible side effects with a negative influence on driving skills, such as somnolence, drowsiness, dizziness and double vision.

What kind of details do you ask and give Mr. Jones on the fitness to drive?

……
……
……
……

Do you also give him written information? If yes, what type of written information?

……
……
……
……

Mr. Jones, leaves your office with a prescription for paroxetine 20 mg and a prescription for ten tablets of zolpidem 10 mg. After five weeks he comes back for a check up.. He took only in the first week a sleeping tablet, a couple of times, and now he sleeps better, even without his sleeping tablets. Despite the fact that he properly took paroxetine, depressive symptoms are still the same. He seems to be without any energy, and his state of mind is still bad. Moreover, he misses his drink before going to bed. He asks you whether - as it is stated in the patient leaflet - it really is a problem if he has a drink in the evening. Since the patient's complaints did not sufficiently decrease, you decide to increase the dosage of paroxetine to 40 mg per day. When entering the prescription in your system, the same text about paroxetine appears on your computer screen (see page ..).

What kind of details do you ask and give Mr. Jones on the fitness to drive?

……
……
……
……
……

What do you tell Mr. Jones about his drinks?

……
……
……
……

This time Mrs. Brown asks for a consultation. Like Mr. Jones, she suffers from depressive symptoms. Mrs. Brown is not a teacher, but a bus driver.

Would you take a different approach than the one you took for Mr. Brown? If this is the case, what would you do?

……
……
……
……
……

Another time Mr. Cooper also asks for a consultation because of depressive symptoms. Mr. Cooper does not have a driving license. He works as a lathe turner.

Would you take a different approach than the one you took for Mr. Jones and for Mrs. Brown? If this is the case, what would you do?

……
……
……
……
……

<u>Case Studies for pharmacists</u>

The location and the time in which the case details appear, may vary from system to system. However, the information contents are the same.

Instructions for completing the case:

- Conduct the case study individually.
- Do not read the whole case before you start. Answer first the questions on page 29, after that those on page 30, and so on. No forward reading.
- In this case, there are different worksheets for general practitioners and pharmacists. Make sure you have the right worksheet.

Mr. Jones comes to your pharmacy. He is 58 years old, he is a teacher, and widower since two years. You know him personally, but you rarely see him in your pharmacy. You are surprised about the way he looks like: it seems that he cares less about himself, he looks thinner, and he gives you an negative feeling. He has a prescription for paroxetine 20 mg, once a day, and, afterwards, a prescription for 10 tablets of zolpidem, 10 mg.

When entering paroxetine in the computer-system, your assistant sees the following text on the computer screen (in red example of information from the Dutch database):

This medicine has minor influence on driving skills (category I). It is comparable to a blood alcohol concentration of < 0.5 g/l (< 0.5 ‰). This is valid in case of a dosage UP TO AND INCLUDING 20 mg once a day. At a dosage HIGHER THAN 20 mg once a day or in combination with other medicines that might influence reaction skills, it is not possible to keep category I.

Recommendations
First prescription

- Advise the patient that, during the first days of treatment, side effects such as drowsiness, dizziness, fatigue and impaired vision may occur.
- Advise the patient that he/she must not drive as long these side effects occur.
- Give the patient the brochure “Participation in traffic” for some practical recommendations.

When entering zolpidem in the computer-system, your assistant sees the following text on the computer screen (in red example of information from the Dutch database):

This drug has a severe or potentially dangerous influence on driving skills (Category III). It is comparable with a blood alcohol concentration of > 0.8 g/l (> 0.8 ‰). This is valid in case of a dosage UP TO AND INCLUDING 10 mg at the night and UP TO AND INCLUDING 8 hours after the medicine intake. FROM 8 hours after the intake, this medicine has no or minor negative impact on driving ability (Category I). In case of a dosage HIGHER THAN 10 mg or in combination with other medicines, it is not possible to refer to this categorization.

Recommendations
First prescription:

Occasional use:

- Dosage UP TO AND INCLUDING 10 mg at night: the patient can drive his/her car 8 hours after the medicine intake. It is safe to drive 8 hours after the medicine intake.
- Dosage HIGHER THAN 10 mg at night: advise the patient to drive his/her car 24 hours after the medicine intake.

Chronic use:

- Dosage UP TO AND INCLUDING 10 mg at night: advise the patient to drive his/her car 8 hours after the medicine intake. It is safe to drive 8 hours after the medicine intake.
- Dosage HIGHER THAN 10 mg at night: advise the patient not to drive.
- Inform patients about possible side effects with a negative influence on driving skills, such as somnolence, drowsiness, dizziness and double vision.

- Give the patient the brochure “Participation in traffic” for some practical recommendations.

What kind of details does your assistant ask and give Mr. Jones on the fitness to drive?

……
……
……
……
……

In this situation, does your assistant get in touch with the GP?

……

Does your assistant also give Mr. Jones written information? If yes, what type of written information?

……
……
……

Five weeks later you see Mr. Jones in your pharmacy again. You notice that the GP has increased the dosage of paroxetine upto 40 mg per day. When entering the prescription in your system, the same text about paroxetine appears on your computer screen (see page...).

What kind of details do you ask and give Mr. de Vries on the fitness to drive?

……
……
……
……
……

What do you tell Mr. Jones about his drinks?

……
……
……

This time Mrs. Brown comes to your pharmacy. You rarely see her in your pharmacy, but you meet her in the bus. Mrs. Brown is actually a bus driver. She also has a prescription for paroxetine 20 mg once a day, and you see the same test on the computer screen (see page ...).

Would you take a different approach than the one you took for Mr. Jones? If this is the case, what would you do?

……
……
……
……

Another time Mr. Cooper also comes to your pharmacy with a prescription for paroxetine 20 mg, once a day and same test appears again on your computer screen (see page...). Mr. Cooper does not have any driving license, and he works as a lathe turner.

Would you take a different approach than the one you took for Mr. Jones and for Mrs. Brown? If this is the case, what would you do?

……
……
……
……

Explanation case studies

For pharmacist assistants the DGV provides the training "Medicines in traffic". For more information visit the website www.medicijngebruik.nl.

What details do you / does your assistant ask and give to Mr. Jones on the fitness to drive?

GP, pharmacist:

The GP informs the patient about the possible side effects with a negative impact on driving abilities. Depending on the severity of the depression, the GP can also advice the patient not to drive a car (for a certain time period) because of his health condition. The doctor discusses the other possible options and their consequences before choosing the treatment, and asks the patient his wishes and possibilities. In agreement with the patient, the GP chooses (a) drug (s) and makes agreements with the patient concerning his treatment.

The pharmacist (assistant) gives the patient instructions concerning the use of his medicines and the implications for the fitness to drive (see points below). During the conversation with the patient the following point deserve attention:

1. <u>In case Mr. Jones uses both drugs in combination</u>

In particular, zolpidem has a serious impact on driving skills (Category 3). Eight hours after taking this drug, its effects on the fitness to drive are still there, but minor (Category 1). Therefore, the GP and/or pharmacist advice the patient not to drive during the eight hours after taking his medication. Paroxetine may also have a slight influence on driving skills, especially during the first days of treatment (Category 1). If these two drugs are combined, it is not possible to base our recommendations on the above mentioned categorization.

Because of a lack of research, we cannot provide any clear guidelines about the recommendations when using two different drugs that belong to category 1. It seems reasonable to assert that the concomitant use of two drugs from category 1 has a greater influence on the patient's driving skills than the use of only one drug of this group. However, we cannot simply state that the impact on the driving skills of the use of two drugs from category 1 corresponds to the impact that is caused by the use of a drug from category 2 or 3.

In this situation, the GP and/or the pharmacist can advice the patient not to drive a car during the time-period that the two drug are used and/or, when he will start driving again, to follow the recommendations:

- Ask an acquaintance to drive together with you to evaluate whether you can safely drive.
- Do not drive if you experience blurred vision, sleepiness, dizziness, difficulties in concentrating or staying awake.

- Do not drive back alone if you do not exactly know the route you have followed to reach a certain destination.
- Do not drink alcohol when you need to drive.
- Do not drive longer than one hour, even if you feel good.
- Do not drive at night or in case of bad weather.

It is important that the patient does not receive different advices from the GP and from the pharmacist. GP and pharmacist need to make an agreement about the recommendations that will be given to their patients. The choice of the type of recommendations also plays a role when the GP advices the patient not to drive, on the basis of his diagnosis. For example, the GP can indicate this point on the prescription to inform the pharmacist.

2. <u>In case Mr. Jones uses only paroxetine</u>

The GP and the pharmacist tell the patient that, during the first days of his treatment, he may experience side effects such as drowsiness, dizziness, fatigue and impaired vision. They advise the patient not to drive as long as these adverse reactions occur. Since alcohol can increase the negative effects of the drug on his driving abilities, the patient, if he wants to drive, can certainly not use any alcohol.

In this situation, does your assistant get in touch with the GP?

Pharmacist:

In order to keep a good communication level, it is recommended that the physician and the pharmacist agree in which context the pharmacist can advice a patient not to take a sleeping medication or he/she should get in touch with the GP to discuss this issue. It can be agreed that the pharmacist is the one who will discuss the use of the sleeping medication with the patient. It can also be agreed that it is not necessary to make contact with the GP when this latter writes a note on the prescription.

Do you/does your assistant also give written information? If yes, what type of written information?

GP, pharmacist:

The GP gives the Brochure for the patient, and the pharmacist (assistant) the patient information leaflet from the National Pharmacist Organization.

What kind of details do you ask and give Mr. Jones on the fitness to drive?

GP, pharmacist:

Once more, the family doctor and/or pharmacist pay attention to the possible negative influence of the drugs on driving skills, and ask whether Mr. Jones suffered from the side effects of his medication and whether, in practice, it was possible not to drive the car. The family doctor and/or pharmacist also ask whether he can find an alternative to drive.

Since in case of a dosage higher than 20 mg once a day it is not possible to base our recommendations on the previously mentioned categorization, the GP and/or pharmacist have to inform the patient that this dosage may have a stronger influence on his driving abilities than the previous dosage. Because of a lack of research we cannot give more concrete advice. It is important that the GP and the pharmacist reach an agreement about the recommendations that will be given to their patients.

The doctor discusses the other possible options and their consequences before choosing the treatment, and asks the patient about his wishes and possibilities. In agreement with the patient, the GP chooses (a) drug (s) and makes agreements with the patient concerning his treatment.

What do you tell Mr. Jones about his drinks?

GP, pharmacist:

Alcohol may increase the hypnotic effect of paroxetine, and, therefore, increase the negative influence on driving skills. Consequently, if Mr. Jones would like to drive, it is wise to retain from drinking alcohol. It is not clearly investigated whether driving could be possible a few hours after alcohol intake. Once more, it is important that GPs and pharmacists make an agreement about the details that will be provided to their patients, so that patients always receive the same recommendations.

Would you take a different approach than the one you took for Mr. Jones? If this is the case, what would you do?

GP, pharmacist:

Since bus drivers (and other professional drivers) often participate longer in traffic, are responsible for passengers, and exposed to extra risks due to the size of the vehicles, it is important to pay special attention when providing them with information about the effects of medications on driving abilities. Moreover, in case of professional drivers, higher requirements are claimed concerning fitness to drive.

In consultation with the patient, the physician decides whether or not to use a drug therapy. If the patient decides to follow, in any case, a drug treatment, the GP advises the patient contact the company physician for his/her recommendations and agreements about his/her work.

The pharmacist can advise the GP to find an alternative that is safe with respect to driving abilities. If this is not possible, the pharmacist can advise the GP to address his/her patient to the company physician.

It is important that the GP and the pharmacist make an agreement about the situations which require that the pharmacist gets in touch with the GP. For example, that can agree that it is not necessary to contact the GP if this latter writes a note on his/her prescriptions to inform the pharmacist.

Would you take a different approach than the one you took for Mr. Jones and for Mrs. Brown? If this is the case, what would you do?

GP, pharmacist:

These medicines can affect driving skills (both motorized and non-motorized transportation), the ability to operate machines and other activities in which abilities to react adequately are involved. Referring to Mr. Cooper, a good fitness to react is important in order to carry out his working duties. A reduced fitness to react during his work could be dangerous. Therefore, you should take the same approach that has been taken for Mrs. Brown.

In consultation with the patient, the physician decides whether or not to use a drug therapy. If the patient decides to follow, in any case, a drug treatment, the GP advises the patient

contact the company physician for his/her recommendations and agreements about his/her work.

The pharmacist can advise the GP to find an alternative that is safe with respect to driving abilities. If this is not possible, the pharmacist can advise the GP to address his/her patient to the company physician.

Used sources

…….

Used sources (in the Dutch example)

- *The LESA "Medicines and traffic safety" (2008)*
- *The Contra-indication "participation in traffic, reports on paroxetine and zolpidem*
- *The NHG standard "Depressive disorders" (depression) (2003)*
- *The NHG standard "Sleep disorders"*
- *Farmacotherapeutisch Kompas (2008)*

A.5. Joint agreements physicians and pharmacists (example from the Netherlands)

Examples of agreements

Attention! These are only agreement examples. The aim is that each group, as a result of the discussion during the meeting, makes its own agreements, and defines their own set of goals. The example used in a Dutch Training Course Manual (Table 9) was developed in 2008 and shows how agreement, action and aim could be described (Note: in the Dutch situation local review committees dealing with therapeutic guidelines frequently meet in so called FTO-meetings)

Table 9: Example to show how agreement, action and aim can be described after a training course

Agreement	Action	Aim
In case of first prescription/dispensing of a medicinal drug of category 1, 2 and 3, the GP and pharmacist provide patients with both written and oral information concerning the consequences of the medication on the fitness to drive.	*GP:* at the beginning of treatment, give each patient the following details: • oral information about consequences of the medication on the fitness to drive based on the drug-specific • the Brochure for the patient Document these details in the computer system *Pharmacist:* at the first dispensing, give each patient the following details: • oral information about consequences of the medication on the fitness to drive based on the drug-specific • the patient information leaflet provided by the national pharmacists organization Document these details in the computer system	During the three months that follow the joint meeting, all the patients, who received a first prescription of a medicinal drug of category 1, 2 or 3, have been informed (orally and in writing), by both GP and pharmacist, about the effects of their drugs on the fitness to drive.
In case of first prescription of a medication of category 3, the pharmacist gets in touch with the GP about a possible alternative, unless the GP wrote a note on the prescription.	*GP:* when prescribing a category 3 medicine for the first time, the GP writes a note on the prescription saying that the pharmacist does not need to get in touch with him/her. *Pharmacist:* in case of first prescription of a category 3 medication, the pharmacist gets in touch with the GP about a possible alternative, unless the GP wrote a note on the prescription.	During the three months that follow the FTO-meeting, when prescribing a medication that belongs to category 3, the GP has made a conscious choice of the concerned medication, taking into account its adverse effects on the fitness to drive.
In case of a second prescription of a category 3 medication, the pharmacist* investigates the experience the patient had about (not) driving.	*Pharmacist:* ask all the patients who receive a category 3 medication for the second time what their experience was about (not) driving. Document these details in the computer system.	During the three months that follow the joint meeting, the pharmacist gets to know how the 95% of the patients who received a second prescription for a category 3 medication feels about the fact he/she can (not) drive.
All pharmacist assistants will follow the training “Medicines in traffic”	*Pharmacist:* subscribe your pharmacist assistants for the training through the website www.medicijngebruik.nl.	In six months, all pharmacist assistants have followed the training “Medicines in traffic”

* A similar agreement can be made for the GP.

A.6. Evaluation questionnaire for health care workers (DRAFT version)

EVALUATION QUESTIONNAIRE Health care workers

EU Project DRUID

Driving under the influence of alcohol, drugs and medicines

Contract No. TREN - 05-FP6TR-SO7.61320-518404-DRUID

Co-funded by the European Commission

Dear participant,

This study is conducted as part of the DRUID European project (Driving under the influence of drugs, alcohol, and medicines). Specifically, it focuses on the actual impact drugs may have on driving safety. We are interested on your opinions on the way medicines may affect driving.

The questionnaire consists of… pages and it comprises _____questions.

It will take you approximately _ minutes to complete.

Please read each question carefully and tick a box ☑ to indicate your answer. In most cases you will only have to tick one box but please read the questions carefully as sometimes you will need to tick more than one box. Answer the next question unless asked otherwise. Once you have finished please take a minute to check whether you have answered all the questions that you should have answered.
We assure you that all your answers and statements will be handled anonymously and that they will be used for scientific research purposes only.

If you have any queries about the questionnaire please do not hesitate to contact _____on _____.

☐ My participation in this questionnaire survey is voluntary (informed consent).

Thank you for your valuable participation,

Research supervisor (name) (Title and address) (Contact details)

Date:_____

ID (filled in by the researcher):

A. BACKGROUND INFORMATION

1. Gender

☐ Male ☐ Female

2. Date of birth (DD/MM/YYYY):_____

3. Country: _____

3a. Area: ☐ Urban ☐ Rural ☐ Other

4. Specialism:

☐ GP ☐ Neurologist
☐ Psychiatrist ☐ Community Pharmacist

5. Year of graduation medical school (YYYY): _____

5a. How many years are you practising as a GP/Neurologist/Psychiatrist/Pharmacist?

(Please state in full years) _____

6. Did you get any education on medicinal effects on driving skills during your studies at University?

☐ Yes ☐ No

7. If you answered "Yes" in Q6, please specify:

B. NEW TECHNOLOGIES LITERACY

1. Do you use the internet to obtain information?

☐ Yes ☐ No

2. Do you use the internet to obtain information on medicines affecting driving behaviour?

☐ Yes ☐ No

3. Have you ever used any software package / programme to obtain information on medicinal drugs effect on driving behaviour?

☐ Yes ☐ No

4. If you answered "Yes" in Q3, please specify which software packages you use:

_____

_____

5. Do you use any medical/clinical software package / programme?

☐ Yes ☐ No

6. If you answered "Yes" in Q5, please specify which software packages you use:

1. _____
2. _____
3. _____

(PRE) Please consider your current experience for completing this questionnaire.
(POST) Please consider your experience the last 6 months for completing this questionnaire.

C. ATTITUDES / AWARENESS

Please evaluate the following statements:

1. I am willing to take into account the effects of medicines on driving skills when prescribing/dispensing medicines.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

2. Would you consider this (Q1) of more concern if your patient is:

- a professional driver?
  ☐ Yes ☐ No
- driving frequently?
  ☐ Yes ☐ No
- driving long distances?
  ☐ Yes ☐ No
- an “inexperienced” driver?
  ☐ Yes ☐ No
- an “experienced” driver?
  ☐ Yes ☐ No
- an elderly driver?
  ☐ Yes ☐ No
- using other CNS active drugs ?
  ☐ Yes ☐ No

3. I am willing to sacrifice some degree of efficacy by prescribing/dispensing a medicine that is less impairing to the driving skills.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

4. I feel being well aware of the effects of medicines on driving skills.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

5. It is important for me to be well-informed on medicinal effects on driving behaviour.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

6. I feel that the information I provide to patients will influence their driving behaviour.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

D. REPORTED BEHAVIOUR

Please reflect on the following statements according to your daily practice routines.

1. I ask a patient about his/her driving exposure when choosing/dispensing a medicine.

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

2. I inform a patient about driving related risks when prescribing/dispensing a medicine.

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

3. I provide a patient with written information materials when prescribing/dispensing a driving impairing medicine.

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

4. I keep systematic records when I prescribe/dispense a driving impairing medicine.

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

5. I keep systematic records when I advise a patient when and how he/she can consider driving a car when using a driving impairing medicine.

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

6. I keep a record of the patient's traffic participation (e.g. how often he/she drives to work).

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

7. I discuss medicinal drug consumption and driving related responsibility issues with the patient.

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

8. How frequently do you usually provide detailed information when prescribing a medicine with impairing effects on driving performance?

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

E. SOURCES

1. I have easy access to data and information about a medicine's effect on driving skills.

☐ Yes ☐ No

2. Please report your sources:

Professional websites ☐
Newsletters ☐
Organisations ☐
Journals ☐
Other ☐

Please specify:

---

3. Did you get any postgraduate education on medicinal effects on driving skills?

☐ Yes ☐ No

4. If you answered "Yes" in Q3, please specify:

F. ACTUAL KNOWLEDGE

Please reflect on the following statements according to your daily practice routines.
For each statement tick the one which best fits your professional opinion.

1. How much do you agree or disagree with the following statements?

Statements	Totally Disagree	Disagree	Disagree Nor Agree	Totally Agree	Don't know
Temazepam (up to 20 mg) is severely impairing driving 8 hours after intake	☐	☐	☐	☐	☐
Diazepam (regardless dose) is severely Impairing within the first 2 months of treatment	☐	☐	☐	☐	☐
Codeine (up to 20 mg) is mostly safe for drivers	☐	☐	☐	☐	☐
Fexofenadine (normal dose) is severely impairing driving	☐	☐	☐	☐	☐

Amitriptyline at the start of treatment is as impairing driving as after 4 weeks of treatment	☐	☐	☐	☐	☐
Paroxetine (up to 20 mg/day) is safe for drivers	☐	☐	☐	☐	☐

2. Physicians/pharmacists are obliged to inform the patients about the possible side effects of his/her medications on driving abilities.

☐ True ☐ False

3. If a physician informs the Driving Licensing Authority (DLA) that his/her patient is using a driving impairment medication, in order to give the DLA the possibility to perform a check-up, you believe this is:

☐ Mandatory practice ☐ Good practice ☐ No obligation ☐ Do not know

4. A patient can be punished with criminal sanctions if he causes a traffic accident while using a medicine with impairing properties whereas the health care provider has advised him not to drive.

☐ True ☐ False

G. USER ACCEPTANCE *(PRE)*

1. If we propose to you a tool (e.g. website, cd-rom) that allows you to find information on medicinal drugs and driving, will you be willing to use it for prescribing/dispensing medicines?

☐ Yes ☐ No ☐ Maybe

2. If you answered "No" or "Maybe" to Q1, what are the main reasons for your reluctance to use them?

H. USER ACCEPTANCE - CONTENT *(POST)*

1. Did you use the guidelines in order to support your communication to patients?

☐ Yes ☐ No

2. If you answered "Yes" in Q1, how often did you use the guidelines?

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

3. if you answered "seldom" or "never" to Q2, what are the main reasons for your reluctance to use them?

---

4. The guidelines for prescribing/dispensing medicines that may affect driving performance were:

	Yes, very much	Quite a lot	Neutral	Not so much	No, not at all
helpful					
useful					
sufficient					

5. Did you use the fact sheets as background information in order to inform patients on medicinal drugs and driving?

☐ Yes ☐ No

6. If you answered "Yes" in Q5, how often did you use the fact sheets?

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

7. The fact sheets for prescribing/dispensing medicines that may affect driving performance were:

	Yes, very much	Quite a lot	Not so much	No, not at all
helpful				
useful				
sufficient				

8. Did you think it was a problem that the facts sheets were provided in the English language?

☐ Yes ☐ No

9. Did you use the pictogram system in order to inform patients on medicinal drugs and driving?

☐ Yes ☐ No

10. If you answered "Yes" in Q5, how often did you use the fact sheets?

☐ always ☐ regularly ☐ sometimes ☐ seldom ☐ never

11. The pictogram system for prescribing/dispensing medicines that may affect driving performance was:

	Yes, very much	Quite a lot	Not so much	No, Not at all
helpful				
useful				
sufficient				

12. Do you think that there should be any additional information that is currently missing?

☐ Yes ☐ No

13. If you answered "Yes" in Q9, please specify:

I. USER ACCEPTANCE & USABILITY –TOOL *(POST)*

Please reflect on how much the following statements represent your personal opinion. Check one of the fields accordingly.

1. I was able to find the information I asked for with no difficulty.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

2. I thought the tool was cumbersome.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

3. This tool would fit well in my working routines.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

4. If you answered "strongly disagree" or "disagree" in Q3, please explain:

---

5. Text and icons are easy to perceive.

☐ strongly disagree ☐ disagree ☐ agree ☐ strongly agree

6. If you answered "strongly disagree" or "disagree" in Q5, please explain:

---

7. Do you think that the tool should have additional options on the screen or are there any controls that are currently missing?

☐ Yes ☐ No

8. If you answered "Yes" in Q7, please specify:

J. FUTURE USE OF THE TOOL *(POST)*

1. Would you be willing to use this tool in the future?

☐ Yes ☐ No ☐ Maybe

2. If you answered "No" or "Maybe" in Q1, please explain:

---

3. What would you use the tool for mostly? (Please specify):

General comments
(Please provide any further comments you may have)

Thank you for your participation!
Please, provide your email address, in case you want to be informed about the general findings of this study.