CIECA

MEDRIL

MEDRIL Workshop II Report

Fitness to Drive: medical impairment, relative risk and medical testing systems for category B drivers

25 November 2005
Brussels, Belgium

TABLE OF CONTENTS

1. Objectives of workshop

The primary objective of the workshop was to present the results of the MEDRIL medical tests on category B drivers in Spain, Finland, Luxembourg and the Netherlands. These tests aimed to determine the medical condition of the category B driving population, across a range of ages but mostly amongst the older generations.

The remaining objectives of the workshop were to examine methods for estimating the accident risk of drivers with a specific medical condition, and to look at the current range of medical screening procedures for category B drivers in a selection of EU member states.

Overall, the workshop was designed to provide a holistic approach to assessing fitness to drive by:

1. determining the incidence of medical conditions in the driving population which may affect fitness to drive
2. estimating the (relative) risk of these medical conditions resulting in a (serious or fatal) accident
3. deciding how best to manage such risk, taking into account both the mobility and safety needs of the road-using population.

2. Workshop agenda

MEDRIL Workshop II:

Fitness to Drive: medical impairment, relative risk and medical testing systems for category B drivers

9:00	**Welcome and introduction**

09.30   **1. The medical condition of the driving population**

Results of the MEDRIL survey of category B drivers in ESP, FIN, LUX & NL

10:30   Coffee

11.00   **2. The impact of medical conditions on road safety**

- A statistical challenge: *Joel Valmain, European Commission*

- Research into 'relative risk' ; *Dr Eric Schmedding, EPILEPSY working group*

12:00   Lunch

13:00   **3. Medical testing systems for category B drivers**

Presentations of different systems around Europe:

- Great Britain: *Dr Heather Major, DVLA*
- Sweden: *Sven Hultman, Dr Stina Stenback, SRA*
- Spain: *Dr Bonifacio Martin, ASECEMP*
- France: *Jean-Pierre Fougère, Ministry of Transport*
- Netherlands: *Dr Ruud Bredewoud, CBR*

15.30   **General discussion**

16:30   End workshop

3. List of participants

Name	Organisation	Country
Joel Valmain	European Commission	
Judith Charlton	Monash University Accident Research Centre	Australia
Johanna Baldi	Bundespolizeidirektion	Austria
Gilbert Auwaerts	Federal Public Service Mobility and Transport	Belgium
Johan Chiers	Responsible Young Drivers	Belgium
Devos Hannes	Katholieke Universiteit Leuven	Belgium
Eric Schmedding	VUB	Belgium
Mark Tant	BIVV / CARA	Belgium
Jamie Dow	Société de l'assurance automobile du Québec	Canada
Kari Hakuli	Vehicle Administration	Finland
Marita Koivukoski	Vehicle Administration	Finland
Jean-Pierre Fougère	Ministère des Transports, DSCR	France
Gerhard Laub	TÜV Süd Life Service GmbH	Germany
Wolf-Rüdiger Nickel	Deutsche Gesellschaft für Verkehrspsychologie	Germany
Wolfgang Schubert	DEKRA FB Verkehrspsychologie	Germany
Renate Zunft	TÜV Nord GmbH	Germany
Alain Bohler	Ministère des Transports	Luxembourg
Alfred Diederich	Ministère des Transports, Commission Médicale	Luxembourg
Peter Ripard	Malta Transport Authority	Malta
Jean Aubert	Ministère de l'Etat, Service des titres de circulation	Monaco
Ruud Bredewoud	CBR	Netherlands
Wiebo Brouwer	University of Groningen, Department of Neuropsychology	Netherlands
Jos De Vries	CBR	Netherlands
Aleid Hekstra	EDPC	Netherlands
Thomas JTP van den Berg	Netherlands Ophthalmic Research Institute	Netherlands
Elena Gimenez	ASECEMP	Spain
Pilar Martin	ASECEMP	Spain
Bonifacio Martin Escurin	ASECEMP	Spain
Elena Valdés	Spanish National Traffic Directorate	Spain
Per Henriksson	VTI	Sweden
Sven Hultman	SRA	Sweden
Stina Stenback	SRA	Sweden
Sylvie Joris Lambert	Institut Universitaire de Médicine Légale	Switzerland
Karine Micalizzi	Institut Universitaire de Medicine Legale de Lausanne	Switzerland
Willy Michiels	CREACA	Switzerland
Marie-Noëlle Poirier	CEE-ONU	Switzerland
Sandrine Rochard	Hôpital Universitaire Genève, Service Rééducation	Switzerland
Roxane Selz	Institut Universitaire de Medicine Legale de Lausanne	Switzerland
Jeannette Soltermann	Bundesamt für Strassen	Switzerland
Heather Major	DVLA	United Kingdom
Gill Bevan	DVLA	United Kingdom
Gary Jones	Forum of Mobility Centres, UK	United Kingdom
Helen Mary Middleton	AMAP, University of Sunderland	United Kingdom
Jo Wright	UK Forum of Mobility Centres	United Kingdom
Martina Hendrix	CIECA	
Nick Sanders	CIECA	
Daniel Vandenberghe	CIECA	

4. Presentations

4.1 EU policy and research on fitness to drive: Joel Valmain, European Commission

See attached ppt presentation.

Mr Valmain spoke of the current efforts to revise the fitness to drive requirements laid down in Annex III of the Driving Licence Directive. This revision is expected to take place from 2006, and will take the form of a Commission Directive. The revision will be based on the findings of the expert medical working groups of the EU Driving Licence Committee, and of recent, ongoing and future research projects. The current expert medical working groups are focusing on:

- Alcohol, drugs and medicines
- Diabetes
- Epilepsy
- Eyesight

Additional working groups, on cardiovascular diseases, psychological disorders and fatigue may be set up in the near future.

Research projects in the area of fitness to drive that have been completed include:

- *Agile*: elderly drivers
- *Consensus*: assessment method for PSN
- *Glare*: large field study of a battery of eyesight tests
- *Immortal*: studies in various domains, eyesight, driving under influence, persons suffering from depression,…
- *Quavadis*: quality and use aspects of vehicle adaptations for disabled

Ongoing research projects include MEDRIL and the following other projects:

- *Alcolock:* field trial on alcolocks
- *Idea:* training program for fitness to drive assessors
- *Rosita 2:* roadside drug testing assessment (oral fluid)

In addition, a multi-million euro integrated research project called DRUID will take place between 2006 and 2010.

4.2 Results of the MEDRIL tests on category B drivers: Nick Sanders, CIECA

See attached ppt presentation.

Nick Sanders presented the results of the MEDRIL tests on 5056 category B drivers in Spain, Finland, Luxembourg and the Netherlands. The tests were carried out using a standardised

medical form and examination (see annex 2). Participating doctors were provided with guidelines on how to carry out the tests (see annex 3).

The final sample sizes, which with the exception of Spain were considerably lower than expected, were as follows:

Spain =   4026
Netherlands =   425
Finland =   260
Luxembourg =   345

(See annex 1 for breakdown according to age and sex).

Following re-weighting for statistical representativeness (age + sex), the results of the tests can be summarised as follows (see following page):

Table: Summary of results of the MEDRIL tests

	Examination /Anamnesis?	Method / Scope	Pass criteria	Main results (abnormalities / failure)
Poor visual acuity	Examination	Method (eyesight): letters, circles, figures or combination Scope: binocular with correction only	Minimum 0,5 vision	Positive correlation with increasing age. 70+ age group – Spain 0,9%, Finland 1,96%, NL 4,72% 20-59 age group (Spain): 0%
Restricted visual field	Examination	Method (visual field): Donders Both eyes open	normal / abnormal	Positive correlation with increasing age. 70+ age group – Spain 0,09%, Finland 2,47%, Lux 4,30%, NL 0,39%
Problems with night vision (glare)	Anamnesis			Positive correlation with increasing age 70+ age group – Spain 11,88%, Finland 13,72%, Lux 11,60%, NL 10,19% 50-60 age group – 4-8% in Spain, ~15% in Luxembourg
High blood pressure	Examination		Threshold: higher than 200 (systolic) or higher than 120 (diastolic)	Positive correlation with increasing age 70+ age group – Spain 0,5%, Finland 3,62%, Lux 1,83%, NL 2,7%
Cardiovascular disease	Anamnesis			Positive correlation with increasing age 70+ age group – Spain 16,64%, Finland 56,22%, Lux 40,46%, NL 24, 81% Rising above 10% from 50 yrs old onwards (Spain, Lux)
Neurological disorders	Anamnesis			Positive correlation with increasing age 70+ age group – Spain 2,7%, Finland 13,21%, Lux 5,57%, NL 5,01%
Mental health problems	Anamnesis			Peaking at 8,1% of 50-54 yr old age category. Signs of decreasing problems thereafter (Spain, Finland, NL) Results over total samples: Spain (20-89): 4,3% Finland (65-89): 2,7% Luxembourg (45-94): 3,5% Netherlands (65-95): 1,4%
High alcohol consumption	Anamnesis	3 portions or more of alcohol, 4 or more times per week		70+ age group (relevant due to potential combination with psycho-active medicines) – Spain 4,9%, Finland 2,52%, NL 8,65% Peaking in Spain at 7,5% of the 55-59 yr old age group
Consumption of psycho-active medicines	Anamnesis	Sedatives, hypnotics, narcoleptics, anti-depressants, analgesics		Positive correlation with increasing age 70+ age group – Spain 9,22%, Finland 14,59%, Lux 20,32%, NL 7,61%

Sleeping disorders	Anamnesis			Growing incidence from 40 yrs old (Spain) and around 10% by 50 yrs old (Spain, Lux) Positive correlation with increasing age 70+ age group – Spain 13,06%, Finland 9,55%, Lux 10,7%, NL 2,75% Increasing incidence from 50 yrs old (Spain = 6%+)
Epilepsy	Anamnesis			Spain sample (20-89 yrs old): 0,5% Finland sample (65-89 yrs old): 0,4% Luxembourg sample (45-94 yrs old): 0,6% Netherlands sample (65-94 yrs old): 0,4%
Diabetes	Anamnesis			Positive correlation with increasing age 70+ age group – Spain 12, 78%, Finland 10,23%, Lux 11,45%, NL 6, 85% 65-69 age group: 9%+ (all countries)
Poor strength, reflexes, balance	Examination	Strength: pulling arm Reflexes: hammer Balance: standing on one leg	normal /abnormal normal /abnormal Remaining balanced for 5 seconds or under = abnormal	Positive correlation with increasing age 70+ age group –Spain 4,81%, Finland 17,67%, Lux 9,52%, NL 2,29%
Cognitive impairment	Examination	Mini Mental Test (test used in each respective country for all patients of 70 years old or above, and for any other patient where there is suspicion of cognitive impairment)	- score 21-26: mild dementia - score 10-20: moderate dementia - score 10-14: moderate-serious dementia - score <10: serious dementia	Positive correlation with increasing age 70+ age group (mild impairment only[1]): Spain 20,6%, Finland 17%, Lux 7,6%, NL 10,34%

[1] The recordings of more serious cases are as follows:
- SPAIN: Serious dementia was found in one case (77 year old). Spain also had 1 moderate to serious case (72 yrs) and 2 moderate cases (71 and 76).
- NETHERLANDS: The Netherlands recorded 4 cases of moderate dementia (70, 71, 74 and 86 years old).
- FINLAND: no cases of moderate or serious dementia.
- LUXEMBOURG: 1 case of both serious dementia and moderate-to-serious dementia (77 and 81 years old respectively).

Questions and comments:

Tom van den Berg (NL) made the following comments:

- The results from each country should not be compared to each other due to the differences in sample sizes (overall and per age group).
- The differences between countries in terms of the results of the visual acuity tests may be explained by the methods used in each country. General practitioners (Finland, Lux, NL) are unlikely to perform the test as accurately as in specialist centres (Spain).

Johanna Baldi (A) correctly stated that the questions regarding alcohol consumption in the anamnesis are designed to be asked by specialists to patients who already recognise a drinking problem. This may explain signs of under-reporting on this subject.

Mark Tant (B) asked about the reliability of the results. As the participating doctors, especially general practitioners, are already under time pressure in their normal professional lives, an extra 10 minutes per MEDRIL test (in addition to the normal fitness to drive test which is being carried out in parallel) is a considerable burden. There is a risk therefore that some doctors may not have taken the necessary time to fill out the form and perform the tests properly, (not all 70+ drivers in the sample underwent mini-mental tests, for example). In general, there is a likelihood of under-reporting of the incidence and severity of various conditions, rather than over-reporting.

Heather Major (GB) asked whether any data existed which could establish a link between medical conditions and road accidents. Some small case control studies do exist but the data in this field is weak.

In conclusion, the results provide some indication of the medical condition of the category B driving population in the age range covered by the MEDRIL tests. Comparative data (relating to the health of the general population) corroborates much of the findings of the tests. What is not known in most cases, however, is the severity of the condition in question, and how these conditions - or combinations of conditions - may affect functional driving performance.

4.3 Relative risk - the context in terms of road accidents: Joel Valmain, European Commission

See attached ppt presentation.

Mr Valmain referred to:

- alcohol & drugs
- young drivers ('Saturday night fever')
- older drivers

with regard to road accidents. Alcohol is involved in approximately 1 in 4 road accidents and drugs (and medicines) in up to 15% of cases. Young drivers (18-25) are particularly at risk late at night on Friday to Saturday and Saturday to Sunday. Older drivers (70+) are increasingly at risk, although they are more represented in pedestrian fatalities than fatalities as drivers.

Other than that, there was very little information available at international level regarding the involvement of medical conditions in road accidents. Joel Valmain stated that the question of better statistics is being raised in WHO global road safety collaboration meetings.

Questions and comments:

Jamie Dow (Canada) mentioned that the Canadian Cardiac Society carried out a study which looked at the risk of patients with heart problems being responsible for road accidents. In addition, a large scale project is underway to match and compare two databases, one on road accidents and another on sufferers of diabetes (with various grades of disease severity) to see what correlations exist. The results are expected in 1 years time.

With regard to 'increasing road accidents' amongst older drivers, both Wiebo Brouwer (NL) and Judith Charlton (AUS) provided some clarification on the subject. Dr Charlton stated that the frailty of older people accounts for much of the 'higher' representation in road accidents involving serious injury or death than some other age categories. There is also increasing evidence that a low-distance bias has not been accounted for. For any driver population, accidents do not increase linearly with miles. So, if you take a low mileage group (such as older people) they will tend to have relatively high accidents per mile just by virtue of their low mileage. It does not necessarily mean that they are intrinsically less safe as drivers, or less fit to drive, than higher mileage people with lower accidents per mile. Once this bias has been accounted for, the higher accident risk generally disappears (see, for example, the downloadable speech by Liisa Hakamies-Blomqvist at ETSC, http://www.etsc.be/etsl.php , "Ageing Europe: the challenges and opportunities for transport safety")

Dr Brouwer repeated that a lot of problems for older drivers are caused by frailty (one problem tends to lead to another). He referred to data indicating a rather exponential increase in road accidents from 70 years old and above, related mostly to intersections and specific multi-tasking situations. This suggests that the drivers' functional limitations should be looked into. This is not true for all older people; and there is a need to consider rehabilitation possibilities and to remember how important mobility is for the elderly, rather than simply withdrawing their licences.

4.4 Calculating relative risk – an example: Dr Eric Schmedding, EU Epilepsy working group

See attached ppt presentation.

Dr Eric Schmedding presented one approach for estimating the relative accident risk of incapacity (e.g. sudden loss of consciousness) or impairment (ongoing functional deficiency) while driving for drivers with medical conditions, compared to drivers who do not have the condition. A risk theory is necessary if fair fitness-to-drive regulations are to be made, and assessors are to make consistent judgements in their work.

His example referred to people suffering from epilepsy (i.e. an incapacity-causing condition). The basis for his risk calculation is the **C**hance of an **O**ccurrence of a **S**eizure in the next **Y**ear or COSY. This could also apply to strokes, heart attacks or hypoglycaemic attacks for diabetics. (Risk calculations for impairments are not as easy as for incapacities because of the relative lack of data on the extent to which the impairment affects functional driving ability).

The factors to take into account in the risk equation are:

- Exposure (how much time is spent driving)
- Risk of a seizure (acute incapacity)
- The probability of having an accident while having a seizure at the wheel
- Risk of a (serious / fatal) accident while having a seizure

A threshold then needs to be set for an acceptable level of relative risk (for example, compared to the population not suffering from the condition). Considering other categories in the driving populations (e.g. novice drivers who have a very high relative risk), a relative risk of 2-3 (times more risk than the average driver without the condition) is considered acceptable by Dr Schmedding.

In the case of epilepsy, the following factors were determined:

Exposure (D) = average 1 hour driving per day = 0,042
Risk of an acute incapacity (r) = for example[2], 20% = 0,2
Risk of having an accident while having a seizure (X) = 60% of cases (according to literature, which is based on quite small samples, this is 50% or 0.5) = 0,6
Risk of having a fatal accident for a driver without the medical condition (F) = 1/7250 (based on accident statistics) = 0,00014

Overall the risk formula is: $r = (R-1).F/(DX)$ which in this case translates into:

$0,2 = (R-1).0,00014/(0,042*0,6)$

$0,2 = (R-1).0,183$
$0.2 = (\textbf{2.1}-1). 0,183$

Therefore, the relative risk (R) of having a fatal accident while driving (based on driving one hour per day and with a chance of sudden incapacity of 20%) is **2.1** (compared to a driver without the condition) or 3.2 for a person with a chance of sudden incapacity of 40%.

In the case of epilepsy, overall recurrence rates for the specific situation (e.g. having had 1 seizure, more seizures, etc) need to be taken into account, thereby adjusting the relative risk of the driver. The cooperation of the patient is vital in establishing the COSY throughout this whole process (in contrast to the assessment of incapacity, which can be tested).

In the case of impairments, the COSY clearly does not exist so for this formula to work, the relevant functions affected by the impairment (e.g. vision-related) need to be identified, sub-divided into impairment categories, and a relative risk per function and per impairment category must be determined. This could be done, for example, by testing the function while driving, compared to a control group which does not have the condition.

Ultimately, such a risk theory could at least ensure some sort of consistency and fairness in fitness to drive calculations, but Dr Schmedding finishes by asking, "…will the theory prove to be an improvement on common sense ?

---

[2] This is determined by a specialist and will vary from patient to patient.

Questions and Comments

Tom van den Berg suggested measuring the relative risk of drivers with medical conditions in comparison to drivers who have consumed alcohol, rather than the population who does not have the medical condition. This could be an easier way for the drivers themselves to comprehend the level of risk involved and to encourage the drivers to cooperate in the risk calculation process. In any case, risk does not necessarily have to be relative to the population which does not have the condition.

The chairman mentioned the risk of harm formula designed by a member of the Canadian Cardiac Society (see http://www.ccs.ca/download/Consensus_Conference_Main_Draft.pdf , pages 89-92) which compares the risk of a private car driver to the accepted level of risk amongst truck drivers with regard to sudden incapacity and accidents.

4.5 Medical screening for category B drivers in GREAT BRITAIN: Dr Heather Major, DVLA

See attached ppt presentation.

In Great Britain, the category B driving licence is valid until the age of 70. Up to that point, any driver who has a medical condition relevant to fitness to drive is under a legal obligation to notify DVLA (the licensing agency) and may be asked to submit a self-declaration form. DVLA then decides whether to follow-up the case with a more detailed examination. After 70, the licence is subject to renewal every 3 years, and each application for renewal must be accompanied by a self-declaration form. General practitioners receive official guidelines on dealing with patients who drive with a medical condition. They are, however, not obliged by law to report patients who they suspect may not be able to drive safely. Licences can be issued for a shorter period of time, if deemed necessary. There was a total medical caseload at DVLA of 365119 category B drivers in 2004. The caseload typically involves a high proportion of vision, cardiovascular and diabetes-related cases in the 70+ generation, and diabetes and alcohol-related cases in the middle-age generation. Many of the latter are convicted drink drivers. The overall procedure is described as impartial, consistent and free, but the process can be slow, it is a medical approach (rather than a functional one) and there is a risk of under-reporting in the self-declaration forms.

4.6 Medical screening for category B drivers in SWEDEN: Sven Hultman and Dr Stina Stenback

See attached ppt presentation.

The Swedish fitness to drive system for category B drivers requires general practitioners and all other doctors to report all patients to the regional authorities when they are sure of a medical unfitness to drive. It is also possible to reach a doctor – patient agreement (as long as the doctor trusts the patient) that the patient shall abstain from driving. Drivers themselves are under no obligation to report to the authorities. There is an element of under-reporting by doctors to the authorities, some of whom feel this role should not be their responsibility; others are not sure whether to report or not: the traditional doctor-patient confidentiality should not be broken unless doctors are 'sure' of a problem, but such certainty is not always

present. In fact, recently a special effort has been made to encourage doctors to report medical problems to the authorities.

The advantages of the system are that the general practitioner knows the patient well, there is no need to incur the costs of an (age-related) blanket medical for everyone and there is evidence to suggest that such quick medical screening tests are not effective in identifying drivers with functional problems due to a medical condition. However, the issue of client confidentiality is a difficult one for some doctors, and some drivers will never see a doctor, thereby falling through the net.

4.7 Medical screening for category B drivers in SPAIN: Dr Bonifacio Martin, ASECEMP

See attached ppt presentation.

In Spain, medical screening is imposed on all ages of the category B driving population, with varying degrees of frequency. The tests take place every 10 yrs until the age of 45, every 5 years between 45 and 70, and every two years from 70. The test itself is carried out by 3 specialists: a general doctor, an ophthalmologist and a psychologist and takes approximately 20 minutes to complete at special driver testing centres. The battery of tests undertaken by each driver is standardised around the country to ensure consistency. Drivers failing at one centre are allowed to re-undergo testing at a second centre, but the latter is obliged to report to the Traffic Directorate that a test was already failed. If the second centre passes the individual, a third centre must be visited to decide the final result.

4.8 Medical screening for category B drivers in FRANCE: Jean-Pierre Fougère, Ministry of Transport and Equipment

See attached ppt presentation.

Systematic medical testing only exists for category B drivers in France if the vehicle is used for professional purposes, or if their licences were limited to 5 year validity from the moment they obtained a licence. Other drivers must inform the local authorities if they are suffering from a temporary or permanent condition which is incompatible with driving, and gained after the licence was obtained. Insurance companies and family also refer drivers to the authorities. The threat of insurance companies not covering accidents involving medical conditions tends to encourage a lot of drivers to report their conditions. Medical committees exist at departmental level, and are overseen by a national committee, to deal with fitness to drive cases of private category B licence holders.

There are some 350000 cases / year of category B drivers in France who undergo medical testing because they reported themselves to the authorities, or were reported by family / insurance companies.

The question of whether to introduce medical testing for older drivers has been addressed in recent years but has not led to any concrete legislative action. In the meantime, general practitioners have been encouraged to assume more responsibility in helping their patients reach considered decisions on their fitness to drive.

Questions and Comments

Dr Gerhard Laub (Germany) briefly informed the participants of measures in Germany for the testing of category B drivers. Like in France, there are no ongoing fitness to drive requirements for all category B drivers. There is, on the other hand, a very elaborate testing system for drivers whose licences have been withdrawn. Most cases here are behavioural ones, rather than medical, so a psychological assessment constitutes a large part of the overall testing process.

4.9 Medical screening for category B drivers in the NETHERLANDS: Dr Ruud Bredewoud, CBR

See attached ppt presentation.

Normally the validity of the driving license issued in the Netherlands is limited to ten years up till the age of 65. Thereafter it is limited to five years. Renewal of a driving license at the town-hall is an administrative procedure until the age of 70. The applicant for renewal of his driving license who is 70 years or older has to produce a CBR Medical Certificate, declaring he is still physically and mentally fit to drive.

From 70 years onwards, a self-declaration form must be submitted every 5 years. This form must be accompanied by a medical certificate from a general practitioner, regardless of whether the form declares any conditions or not. Most doctors do not carry out the medical checks on their own patients (the medical association in fact forbids this and to prevent this occurring, the doctor is not allowed to charge his/her own patient for such a test, whereas an 'independent' practitioner can).

However, a recent decision by the Ministry of Transport will lead, in 2007, to the abolition of the extra medical testing requirements for drivers over 70. This came about following lobbying by senior citizens' organisations who claimed these requirements were discriminatory. Drivers over 70 will thus no longer need to undergo systematic medical testing but will simply need to submit self-declaration forms to the authorities in order to renew their licences. This self-declaration must be co-signed by the family doctor, who declares that all questions are answered truthfully.

On-road fitness to drive assessments are the norm in the Netherlands (10000 per year and increasing) when a doctor is unable to determine whether the driver is safe to drive or not. This came about due to the following statement from the Dutch Health Council (2001):

"Because there are no scales to define fitness to drive, the meaning of the medical report is to inform the CBR on the impairments. The outcome of the on road test will provide the final conclusion"

5. Final summary

The chairman concluded that a wide variety of obligatory and voluntary fitness to drive procedures exist across the European Union, covering a range of different ages. The systems may rely on voluntary or obligatory submission of self-declaration forms, physician reporting requirements, blanket medical testing or simply the voluntary notification of individual drivers.

Joel Valmain, the European Commission representative, stated that harmonising these systems is not a real option, but harmonising the accepted standards for fitness to drive is the current priority at EU level. Clearly, some countries are not satisfied with the minimum standards currently laid down in Annex III of the driving licence directive, which, admittedly, may either be outdated or indeed based on political decision-making rather than scientific evidence-based information. This is the challenge currently facing the expert medical groups working for the EU Driving Licence Committee and the work of research groups around Europe, including those financed by EU grants.

The EU can issue best-practice recommendations, but drafting legislation is different. Once legislation is drafted and written, then adopted by member States, it is the role of the Commission to check if the legislation has been properly implemented and to launch infringements procedures if not.

Annex 1: Final samples in MEDRIL tests

Table 1: SPAIN, final sample (n=4026, ages 20-89)

Age cat.	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59
Total	219	403	387	370	394	331	413	343
Male	108	213	184	198	197	168	202	192
Female	111	190	203	171	195	163	208	151
Age cat.	**60-64**	**65-69**	**70-74**	**75-79**	**80-84**	**85-89**		
Total	391	368	314	83	7	3		
Male	190	203	158	53	6	3		
Female	199	161	155	30	1	0		

Table 2: THE NETHERLANDS, final sample (n=425, ages 65-94)

Age cat.	65-69	70-74	75-79	80-84	85-89	90-94
Total	81	203	67	62	10	2
Male	49	138	47	38	8	2
Female	32	45	20	24	2	0

Table 3: FINLAND, final sample (n=260, ages 65-89)

Age cat.	65-69	70-74	75-79	80-84	85-89
Total	100	85	47	23	5
Male	60	56	34	16	5
Female	40	29	13	7	0

Table 4: LUXEMBOURG, final sample (n=345, ages 45-94)

Age cat.	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84
Total	30	72	47	39	23	47	40	28
Male	21	46	30	31	13	34	29	22
Female	8	25	17	8	9	13	11	6
Age cat.	**85-89**	**90-94**						
Total	17	2						
Male	14	2						
Female	3	0						

Annex 2: Common MEDRIL medical form

I. PATIENT INFORMATION

Sex: Male ☐ Female ☐

Age: ………

Length of education (school-leaving age): 16 or lower ☐ 17-19 ☐ higher education ☐

Location of residence (population):

<2000	☐	40001-100000	☐
2001-10000	☐	100001-500000	☐
10001-40000	☐	500001+	☐

Living status:

Living alone ☐ Living with a partner ☐

II. DOCTOR'S ANAMNESIS

	YES	NO
1. **Eyes**: Are you being treated (or have you ever been treated) by an ophthalmologist?	☐	☐
Do you have problems with night vision?	☐	☐
(If "no"): do you ever drive at night?	☐	☐
2. **Cardiovascular:** have you ever been treated for cardiovascular diseases?	☐	☐
3. **Renal**: have you ever been treated for kidney problems?	☐	☐
4. **Diabetes**: have you ever been treated for diabetes?	☐	☐
5. **Neurological**: have you ever suffered from any disorder of the brain or nervous system (Parkinson's, stroke, vertigo…)?	☐	☐
6. **Surgery:** have you ever had surgery on your eyes or brain, or have you ever had an organ transplant?	☐	☐
7. **Epilepsy** or similar: have you ever suffered from epilepsy or a similar disorder?	☐	☐
8. **Psychiatric conditions**: have you ever received treatment for your mental health?	☐	☐
9. **Medication affecting driving:** Do you take any medicine that may influence your ability to drive, such as hypnotics, tranquillisers, antidepressants, anti-psychotics, stimulants or other similar drugs? Hypnotics ☐ Sedatives ☐ Narcoleptics ☐ Analgesics ☐ Anti-depressants ☐	☐	☐
10. **Sleeping disorders:** do you have problems with abnormal sleepiness, getting to sleep or waking up suddenly during sleep?	☐	☐

11. Alcohol consumption

a) How often do you drink 3 portions of more of beer, wine, or other alcoholic beverages?

Never	☐	2-3 times a week	☐
About once a month	☐	4 times a week or more	☐
2-4 times a month	☐		

b) How many portions of alcohol do you generally consume each time you drink alcohol?

1-2 portions	☐	7-9 portions	☐
3-4 portions	☐	10 or more	☐
5-6 portions	☐		

c) How often do you consume six or more portions?

Never	☐	Once a week	☐
Once a month	☐	Daily or almost daily	☐

---

12. **Other** (please specify):

III. MEDICAL EXAMINATION

	PASS	**FAIL**
1. **Eyesight** (minimum 0.5)	☐	☐
2. **Visual field** (normal / abnormal)	☐	☐
3. **Strength** (normal / abnormal)	☐	☐
4. **Reflexes** (normal / abnormal)	☐	☐
5. **Balance** (normal / abnormal)	☐	☐
6. **General physical condition**: blood pressure (>200 systolic, or > 120 diastolic)	☐	☐
7. **General physical condition**: stethoscope (normal / abnormal)	☐	☐
8. **Cognitive impairment**: mini-mental test SCORE (max. 30): ………		
9. **Alcohol abuse** test (CAGE) if appropriate	☐	☐
Have you ever felt you ought to cut down on your drinking? Y ☐ N ☐		
Have people annoyed you by criticizing your drinking? Y ☐ N ☐		
Have you ever felt bad or guilty about your drinking ? Y ☐ N ☐		
Have you ever taken a morning eye opener to steady your nerves? Y ☐ N ☐		

---

10. Other (please specify):

Annex 3: Guidelines for participating doctors (MEDRIL tests)

EU MEDRIL PROJECT:
Medical Testing of Drivers (Category B)

MEDRIL

Participating EU countries:
Spain, Netherlands, Finland and Luxembourg

A. Background leaflet (to be translated and given to each patient to read in the doctor's waiting room)

MEDRIL is a European project on medical testing for drivers. The aim of the project is to see what percentage of the driving population suffers from medical problems which could affect their ability to drive.

Would you be willing to participate in this project? Your participation would involve a short series of extra tests which take about **10** minutes to complete. This test is carried out in parallel with the normal test you have in your country.

The medical test results are strictly anonymous and are only being used for scientific purposes: there is no reference to the patient's name, social security number or any other code which could identify that person. Participation is strictly voluntary. Patients choosing to participate must be prepared to state their age, sex and location of residence. Patients may refuse to state their school-leaving age and/or living status (living alone / with someone).

The tests are non-invasive, i.e. there is no requirement to give a blood, urine or stool sample.

MEDRIL covers 4 countries in the European Union: Spain, Netherlands, Finland and Luxembourg. A total of 10000 medical tests are being carried out during the project.

Thank you for your assistance.

B. Inclusion Criteria

- Category B drivers (car drivers)
- Men and women
- From 20 years old and above
- Samples per age group: **to be decided by each country, according to the proportion of drivers in the age group in question**

C. Exclusion criteria

- Applicants for the driving licence for the very first time
- Patients who were originally denied a licence on medical grounds are now reapplying
- Drivers without a Category B driving licence
- Patients refusing to participate in the MEDRIL test
- Patients exceeding the individual age samples already collected by the doctor in question.

D. Doctors' guidelines

I. PATIENT INFORMATION

Patients must be willing to state their age, sex and location of residence.
Patients may refuse to state their school-leaving age and/or living status (living alone / with someone).

II. DOCTORS ANAMNESIS:

The doctor should ask these questions orally to the patient. Responses should be noted in the form of YES or NO (with a tick or cross in the relevant box). No further details are required unless stated on the form. For instance, Question 9 on medication should be supplemented with the group of medication being used. Question 11 on alcohol consumption is also more detailed. For information, a portion of alcohol is equivalent to:

- A bottle of beer or cider (33cl)
- A glass of wine (12cl)
- A small glass of sherry (8cl)
- A measure of liquor (4cl)

II. 5 Neurology: if patient has had a stroke or brain surgery, the doctor should pay particular attention to the visual field during the medical examination.

Question 12: "Other" can be used by the doctor to make any observations not included on the rest of the form which he/she considers relevant.

III. MEDICAL EXAMINATION:

The doctor should record only PASS or FAIL – <u>OR</u> NORMAL or ABNORMAL - (with a tick or cross in the relevant box) for each measurement.

TEST	METHOD AND SCOPE	PASS CRITERIA
1. Eyesight	Method (eyesight): letters, circles, figures or combination Scope: binocular with correction only	Minimum 0,5 vision
2. Visual field	Method (visual field): Donders Both eyes open	normal / abnormal
3. Strength, 4. Reflexes 5. Balance	Strength: pulling arm Reflexes: hammer Patient stands with hands on hips and eyes open. One leg raised about 10cms from floor. Instructions are given to the patient to stay balanced for at least 10 seconds. One practice allowed before actual test. The patient passes the test if he/she remains balanced for longer than 5 seconds. If patient remains balanced for 5 seconds or under, he/she may have another attempt. The longest balance time of the two is the final result.	normal /abnormal normal /abnormal Remaining balanced for 5 seconds or under = abnormal
6. Blood pressure 7. Heart and lungs	Blood pressure Stethoscope	Threshold: higher than 200 (systolic) or higher than 120 (diastolic) normal / abnormal
8. Cognitive impairment	Mini Mental Test (test used in each respective country <u>for all patients of 70 years old or above</u>, and for any other patient where there is suspicion of cognitive impairment)	- score 21-26: mild dementia - score 10-20: moderate dementia - score 10-14: moderate-serious dementia - score <10: serious dementia

9. Alcohol abuse test (CAGE) if appropriate	Only to be used if the results of Q.11 of the anamnesis are <u>one or more</u> of the following:
	  a) 4 times per week or more OR
	  b) 7-9 portions, or 10 or more portions OR
	  c) daily or almost daily
	
	CAGE test:
	A: Have you ever felt you ought to cut down on your drinking? B: Have people annoyed you by criticizing your drinking? C: Have you ever felt bad or guilty about your drinking ? D: Have you ever taken a morning eye opener to steady your nerves?
		Failed, if YES is the response for 2 or more of the CAGE questions

Question 10: "Other" can be used by the doctor to make any observations not included on the rest of the form which he/she considers relevant.

Completed forms should be returned by post to:

INSERT ADDRESS HERE

For further information regarding the project, please contact:

INSERT CONTACT NAME AND DETAILS HERE

Annex 4: Presentations (see email attachments)