



# Road Safety Target in Sight: Making up for lost time



## 4<sup>th</sup> Road Safety PIN Report



## PIN Panel

Austria (AT)	Klaus Machata, Road Safety Board (KfV)
Belgium (BE)	Miran Scheers, Belgian Road Safety Institute (IBSR/ BIVV)
Bulgaria (BG)	Alexi Kesiakov/ Valentin Pantchev, Ministry of transport
Cyprus (CY)	George Morfakis, Ministry of Communications
Czech R. (CZ)	Fric Jindrich, Transport Research Centre (CDV)
Denmark (DK)	Jesper Sølund, Danish Road Safety Council
Estonia (EE)	Dago Antov, Tallinn University of Technology
Finland (FI)	Esa Rätty, Finnish Motor Insurers' Centre (VALT)
France (FR)	Jean Chapelon, Road Safety Expert
Germany (DE)	Jacqueline Lacroix, German Road Safety Council (DVR)
Greece (EL)	George Yannis, Technical University of Athens
Hungary (HU)	Péter Holló, Institute for Transport Sciences (KTI)
Ireland (IE)	Michael Rowland, Road Safety Authority (RSA)
Israel (IL)	Shalom Hakkert, Technion
Italy (IT)	Pietro Marturano / Luciana Iorio, Ministry of Transport
Latvia (LV)	Aldis Lama, Ministry of Transport
Lithuania (LT)	Vidmantas Pumputis, Ministry of Transport
Luxembourg (LU)	Guy Heintz, Ministry of Transport
Malta (MT)	Therese Ciantar, Ministry of Transport
Netherlands (NL)	Peter Mak, Ministry of Transport
Norway (NO)	Rune Elvik, Institute of Transport Economics (TOI)
Poland (PL)	Ilona Buttler, Motor Transport Institute (ITS)
Portugal (PT)	João Cardoso, National Laboratory of Civil Engineering (LNEC)
Romania (RO)	Cristian Constantinescu, Road Authority
Slovakia (SK)	Karol Meliška, Ministry of Transport
Slovenia (SI)	Tomaž Pavčič, Ministry of Transport
Spain (ES)	Pilar Zori, Ministry of Interior
Sweden (SE)	Anna Vadeby, National Road and Transport Research Institute (VTI)
Switzerland (CH)	Stefan Siegrist, Council for Accident Prevention (bfu)
U.K.	Lucy Rackliff, Loughborough University

## PIN Observers

Greece – Stelios Efstathiadis, Road Safety Institute  
Panos Mylonas

Italy – Lucia Pennisi, Automodile Club d'Italia (ACI)

## PIN Steering Group

Richard Allsop, ETSC Board of Directors (Chairman)  
Åsa Ersson, Swedish Transport Administration (SRA) (Co-chair)  
Finn Harald Amundsen, Norwegian Public Roads Administration  
Astrid Linder, National Road and Transport Research Institute (VTI)  
Jean-Paul Repussard, Maria-Teresa Sanz-Villegas, European Commission  
Henk Stipdonk, Institute for Road Safety Research (SWOV)  
Stephen Stacey, Toyota Motor Europe  
Pete Thomas, Loughborough University  
Antonio Avenoso, ETSC

## PIN Secretariat

Graziella Jost  
PIN Programme Manager  
[graziella.jost@etsc.eu](mailto:graziella.jost@etsc.eu)

Marco Popolizio  
PIN Programme Officer  
[marco.popolizio@etsc.eu](mailto:marco.popolizio@etsc.eu)

Vojtech Eksler  
PIN Programme Analyst  
[vojtech.eksler@etsc.eu](mailto:vojtech.eksler@etsc.eu)

For more information about ETSC's activities and membership, please contact

European Transport Safety Council  
Avenue des Celtes 20  
B-1040 Brussels  
Tel. + 32 2 230 41 06  
Fax. +32 2 230 42 15  
Internet: [www.etsc.eu/PIN](http://www.etsc.eu/PIN)

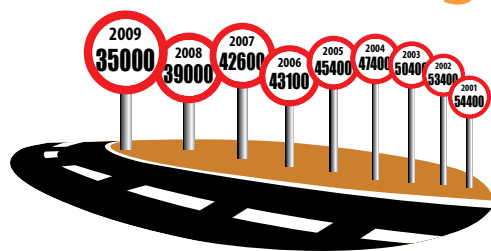
ETSC is grateful for the financial support provided for the Road Safety Performance Index (PIN) by the Swedish Transport Administration, the Norwegian Public Roads Administration and Toyota Motor Europe.

The contents of this publication are the sole responsibility of ETSC and do not necessarily reflect the views of sponsors or the organisations to which the PIN Panel and Steering Group members belong.

© ETSC, June 2010



# Road Safety Target in Sight: Making up for lost time



## 4<sup>th</sup> Road Safety PIN Report

Written by

Graziella Jost  
Marco Popolizio  
Richard Allsop  
Vojtech Eksler

22 June 2010



## Acknowledgements

ETSC is grateful for the contribution of the members of the Road Safety PIN Panel and Steering Group to this report. This report would not have been possible without the data, background information and expert knowledge they provided. Our special thanks go to the Chairman of the Road Safety PIN, Prof. Richard Allsop, and the Co-chair, Åsa Ersson, for their invaluable support.

This report forms part of ETSC's Road Safety PIN Programme. The PIN Programme relies on the Panellists in the participating countries to provide the data for their countries and to confirm the quality of the data. This forms the basis for all PIN publications, which are circulated in draft to the PIN Steering Group and Panel for comment and are finalised after taking account of comments received from them.

The CARE and IRTAD databases have been used for verification. ETSC is grateful to Maria-Teresa Sanz-Villegas from the European Commission and Véronique Feypell de La Beaumelle from the Joint Transport Research Centre of the OECD and the International Transport Forum. Reference has also been made to the outcomes of SafetyNet including the European Road Safety Observatory (ERSO).

ETSC is also grateful for the financial support provided for the PIN Programme by the Swedish Transport Administration, the Norwegian Public Roads Administration and Toyota Motor Europe. The contents of this publication are the sole responsibility of ETSC and do not necessarily reflect the views of the sponsors or the organisations to which the PIN panel and Steering Group members belong.

## The European Transport Safety Council

The European Transport Safety Council (ETSC) is an international non-governmental organisation which was formed in 1993 in response to the persistent and unacceptably high European road casualty toll and public concern about individual transport tragedies. ETSC provides an impartial source of advice on transport safety matters to the European Commission, the European Parliament and to national governments and organisations concerned with safety throughout Europe.

ETSC brings together experts of international reputation and representatives of a wide range of national and international organisations with transport safety interests to exchange experience and knowledge and to identify and promote research-based contributions to transport safety.

**Executive Director:** Antonio Avenoso

**Board of Directors:**

Professor Herman De Croo (Chairman)  
Professor Richard Allsop  
Dr. Walter Eichendorf  
Professor G. Murray Mackay  
Professor Pieter van Vollenhoven

Brian Simpson, MEP  
Dr. Dieter-Lebrecht Koch, MEP  
Ines Ayala Sender, MEP  
Dirk Sterckx, MEP  
Corien Wortmann-Kool, MEP

# Contents

Executive summary	5
Introduction	7
<b>1  Making up for lost time: good progress in 2009 - especially in Central and Eastern Europe</b>	<b>8</b>
1.1 Catching up in 2009 but too late for the 2010 target	10
1.2 Best year-to-year reduction since 2001	12
1.2.1 Outstanding reduction in Central and Eastern European Countries	12
1.2.2 ... with some disappointing results in a few other EU countries	14
1.3 Road safety league	15
1.4 Recent road mortality versus annual reduction over the last decade	16
1.5 Deaths per billion vehicle kilometres travelled	17
1.6 Interviews	18
<b>2  Set targets for serious injury reduction in Europe</b>	<b>25</b>
2.1 Comparison between countries	27
2.1.1 Underreporting of serious injuries	29
2.1.2 Towards a common definition of serious injuries?	30
2.1.3 The importance of linking police and hospital records	31
2.1.4 Killed and seriously injured per million population: another indicator in the future?	32
2.2 Background	33
2.2.1 Road safety as a public health issue	33
2.2.2 Setting national targets to reduce serious injuries	33
2.2.3 Improve post-crash care	34
2.2.4 Long-term impacts of traffic injuries	35
2.2.5 Ongoing European Cooperation in injury data collection	36
2.3 Recommendations	37
2.4 Interviews	38

<b>3  Tackling the three main killers on the roads</b>	<b>41</b>
3.1 Progress in curbing driving speeds	42
3.1.1 Comparison between countries	42
3.1.2 Some progress on motorways	44
3.1.3 Noticeable progress on rural roads	46
3.1.4 Good progress on urban roads	47
3.1.5 Effective speed management will lead to fast progress in reducing road deaths	49
3.1.6 Speeding motorcycle riders	51
3.1.7 Speeding and Heavy Goods Vehicles (HGVs)	52
3.1.8 Recommendations	53
3.2 Progress in reducing drink driving deaths	54
3.2.1 Comparison between countries	54
3.2.2 High under-reporting of drink driving deaths	57
3.2.3 Preventing drink driving: measures that work	58
3.2.4 Recommendations	61
3.3 Seat belt wearing after 50 years of the seat belt	63
3.3.1 Seat belt wearing in front seats	63
3.3.2 Seat belt wearing in rear seats	65
3.3.3 Recommendations	66
3.4 Overview	67
3.5 Interview	69
<b>4  Recommendations</b>	<b>71</b>
Bibliography	74
Annex - Chapter 1	78
Annex - Chapter 2	82
Annex - Chapter 3	87

# Executive summary

This 4<sup>th</sup> PIN Report provides an overview of European countries' performance in five areas of road safety. It builds on the three previous Road Safety PIN Reports published in June 2007, 2008 and 2009<sup>1</sup>. It shows how countries have progressed in reducing road deaths and serious injuries since 2001. It also shows how countries perform in tackling the three main killers on the roads: speeding, drink driving and failure to wear a seat belt.

These rankings have been carried out during the fourth year of the Road Safety Performance Index (PIN) between September 2009 and June 2010. They cover 30 countries, all 27 Member States of the European Union, together with Israel, Norway and Switzerland.

## Progress toward the target

The European Union has set itself the ambitious target of halving the number of road deaths between 2001 and 2010. The 2010 target will not be reached by the target date. As many as **34,900** people lost their lives in road collisions in 2009; this is still far more than the maximum of 27,000 which the EU set for 2010. Yet it is 19,500 fewer than in 2001 showing great progress has been made across the EU. Since 2001, road deaths have been cut by **36%** in the EU27. In the EU15, the countries who originally set the target, road deaths have been cut by **42%**. In the EU10, the group of countries who joined in 2004, reductions have been slower but have gained pace in the last two years to reach **27%** in 2009.

Comparison of developments up to 2009 show that **Latvia, Spain, Portugal** and **Estonia** achieved the best reductions. **Latvia** recorded an outstanding 54%, **Spain** 52%, **Portugal** and **Estonia** 50%. If progress continues this year, these four countries will have reached the target by the 2010 deadline. **France** and **Lithuania** are following closely and, if they step up their efforts, might just reach the target on time. All other countries have progressed to a lesser extent. Only in **Romania** (and in Malta where the small number fluctuates widely) were the numbers of road deaths higher in 2009 than in 2001.

In 2009, road deaths were cut by **11%** across the EU compared to 2008. This has been the best year-to-year reduction since 2001. The good news about progress is coming from the Central and Eastern European Countries. **Slovakia** (36%), **Lithuania** (26%) and **Estonia** (24%) achieved the best reductions in 2009 (along with **Denmark** at 25%). In 2009, for the first time, the EU10 with **18%** achieved a better year-to-year reduction in road deaths than the EU15 with **8%**.

The adoption of the quantitative target in 2001 has proved to be a turning point in motivating countries, in particular those facing the greatest challenges, to reduce the numbers of people killed on the roads. Now it is the time for the EU to adopt ambitious but achievable quantified targets for reducing deaths and serious injuries by 2020.

---

<sup>1</sup> ETSC (2007), 1<sup>st</sup> PIN Report, ETSC (2008), 2<sup>nd</sup> PIN Report, and ETSC (2009), 3<sup>rd</sup> PIN Report, are available on [www.etsc.eu/PIN-publications.php](http://www.etsc.eu/PIN-publications.php).

## Reducing serious injuries in Europe

In addition to the **35,000** people killed in road collisions in the European Union, about **1,700,000** people are recorded as injured in police records each year, among them **300,000** seriously. Road deaths represent only the “tip of the iceberg” of traffic collisions. For every road death in the EU, at least 44 road injuries are recorded, of which 8 are serious.

Yet, although serious injuries tend to be better reported than slight, not all serious injuries are recorded by the police. EU comparisons are hampered because both the levels of injury reporting and national definitions of a serious injury vary greatly among countries. The magnitude of underreporting undermines proper allocation of resources to preventive measures. Improving the quality of data about seriously injured survivors of road collisions is key to designing more effective safety policies.

The EU Road Safety Action Programme 2011- 2020 should include challenging targets for the reduction of seriously injured people alongside a target for continued reduction in deaths. At the same time, the EU should work towards the adoption of a common definition of serious injuries to foster EU comparison. In parallel, Member States should improve the recording of serious injuries by making use of both police and hospital records.

## Tackling the three main killers on the roads

Speeding, drink driving and failure to wear a seat belt are the three main risk factors on the road. Measures to tackle these dangerous behaviours behind the wheel have been at the core of road safety policy for decades and significant progress has been made since 2001. Data from the countries that monitor mean driving **speeds** in free-flowing traffic show that drivers have slowed down appreciably since 2001. Best progress has been made on motorways, where ‘only’ up to 30% of drivers now exceed the speed limit. Unfortunately, speed violations are still up to 70% on rural roads and as many as 80% on urban roads.

Deaths attributed to **drink driving** have decreased somewhat faster than other road deaths since 2001 in the EU. However, a massive underreporting distorts the real picture: it is estimated that alcohol related deaths make up to 25% of all road deaths against 11.5% according to official statistics.

Although obligatory in all Member States, **seat belt use** in the EU is estimated to be only 88% for front seats and as low as 72% for rear seats. Some progress has been made, but wearing rates are still disturbingly low in many Eastern and Southern European countries. **France, Germany, Sweden** the **UK** and the **Netherlands** have the highest seat belt wearing rates, 95% and higher, for drivers and front seat passengers, while in **Hungary, Slovakia, Greece** and **Italy** rates are below 80%. For rear seat passengers the disparities between countries are much bigger: from over 80% in **Germany, Finland, UK, France, Spain** and the **Netherlands**, all the way down to under 30% in **Cyprus, Greece, Malta** and **Latvia**.

There is a huge potential in addressing these three longstanding areas of road safety. The EU Road Safety Action Programme 2011-2020 should provide a strong case for fighting speeding, drink driving and the failure to wear a seat belt. It should encourage all Member States – and provide support for those facing the greatest challenges – to monitor indicators of these behaviours. The EU should also adopt the Cross Border Enforcement Directive to address speeding in the EU without delay. Member States should be prioritising road safety measures, including stricter laws, more stringent enforcement and educational campaigns, tackling the three main killers on the roads and should set themselves targets for desirable compliance levels.



# Introduction

In 2009, about **35,000** people were killed in the EU27 as a consequence of road collisions. Around 300,000 were seriously injured and many more suffered slight injuries. While the number of deaths and seriously injured people is falling, studies have shown that faster progress is possible if all effective means are applied (Elvik et al. 2009).

The European Union has set itself a target of halving the yearly number of road deaths between 2001 and 2010. The European Commission's Mid-term Review of progress toward this target has however shown that Europe is off target and greater efforts are needed (EC 2006), at both the European and national levels.

Against this background, the European Transport Safety Council (ETSC) set up in April 2006 the Road Safety Performance Index (PIN) as an instrument to spur European countries to greater efforts to enhance road safety. By comparing Member States' performance, it serves to identify and promote Best Practice in Europe and bring about the kind of political leadership that is needed to create what citizens deserve - a road transport system that offers a maximum of safety.

The Index covers all relevant areas of road safety including road user behaviour, infrastructure and vehicles, as well as road safety policymaking more generally. Over the three initial years, 17 cross-country comparisons on eleven different areas of road safety have been presented in a series of **PIN Flashes**. The findings from those country rankings have been discussed in **25 PIN Talks** gathering key road safety policymakers to an informal lunch to discuss national road safety policy, targets and strategies. National decision-makers were confronted with both the successes and shortcomings of their road safety policy.

Flashes 1 to 5 are compiled in the **1<sup>st</sup> PIN Annual Report (2007)** showing how countries progressed in reducing road deaths between 2001 and 2005 and on how they performed in the three key areas of road user behaviour: seat belt use, drink driving and speeding. To complement the evidence in the area of seat belt use, countries were also compared in relation to the availability of seat belt reminders in new cars. The **2<sup>nd</sup> PIN Report (2008)** summarises the findings of Flashes 6 to 10 showing how countries progressed in reducing road deaths between 2001 and 2007, and how they performed in protecting two road users group particularly at risk: older people and motorcyclists. It also gives an overview of the disparities in motorway safety at a time when the EU was adopting a European Directive on road infrastructure safety management. Flashes 11 to 14 are compiled in the **3<sup>rd</sup> PIN Report (2009)** presenting an update of the developments in reducing road deaths up to 2008 and the findings of the two country rankings on vehicle safety and deaths among children and a ranking on road safety in capital cities .

This **4<sup>th</sup> PIN Report** presents in Chapter 1 an update of the developments in reducing road deaths up to 2009 and the findings of the country rankings published during the 4<sup>th</sup> year of the PIN in Chapter 2 (Flash 15 on serious injuries) and Chapter 3 (Flash 16 Tackling the Three Main Killers on the roads). Chapter 3 provides an update of the rankings published in the 1<sup>st</sup> PIN Annual Report in 2007 in the three key areas of road user behaviour: seat belt use, drink driving and speeding. In a last Chapter, the reader will find recommendations to EU institutions and Member States' authorities.

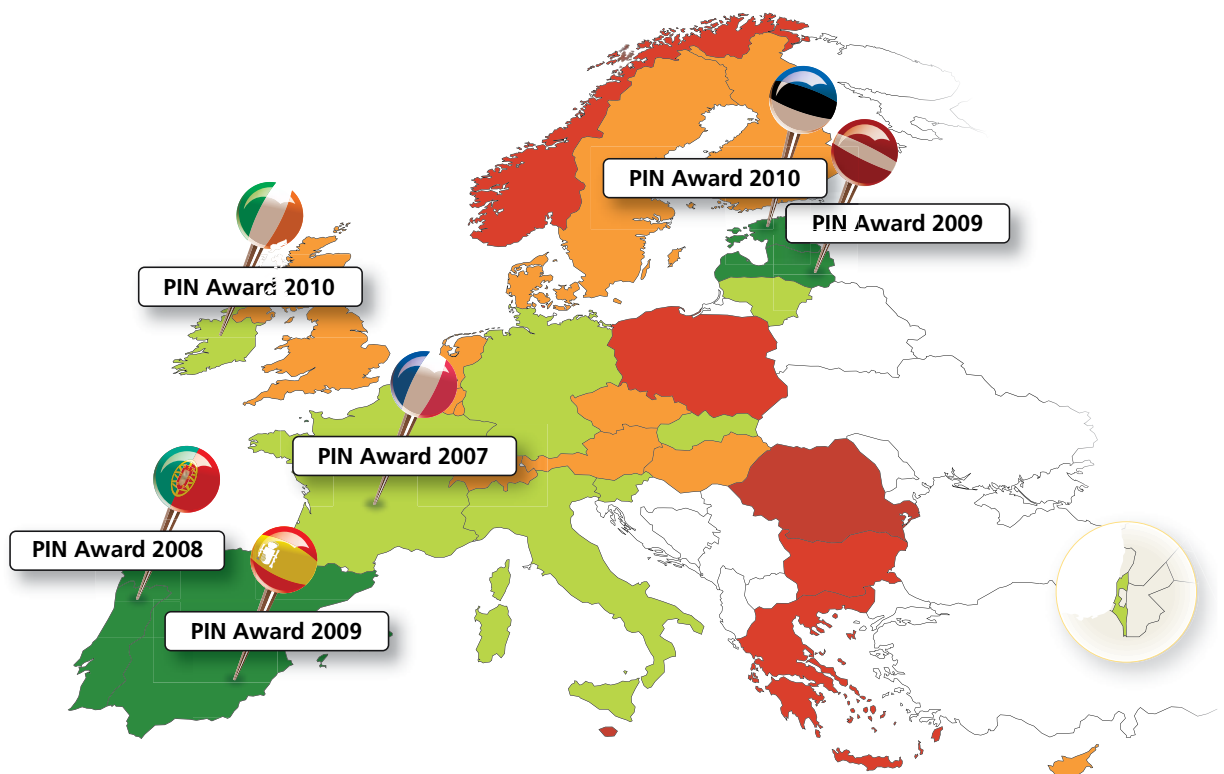
# 1| Making up for lost time: good progress in 2009 - especially in Central and Eastern Europe

The European Union has set itself the ambitious target of halving the number of road deaths between 2001 and 2010. These country rankings comparing developments up to 2009 come at a crucial time when the European Commission is soon to adopt new road safety targets for 2020.

The 2010 target will not be reached by the target date. As many as **34,900** people lost their lives in road collisions in 2009; this is still far more than the maximum of 27,000 which the EU set for 2010. Yet it is 19,500 fewer than in 2001 showing great progress has been made across the EU. Since 2001, road deaths have been cut by **36%** in the EU27. In the EU15, the countries who originally set the target, road deaths have been cut by **42%**. In the EU10, the group of countries who joined in 2004, reductions have been slower but have gained pace in the last two years to reach **27%** in 2009.

Comparison of developments up to 2009 show that **Latvia, Spain, Portugal and Estonia** achieved the best reductions. **Latvia** recorded an outstanding 54%, **Spain** 52%, **Portugal** and **Estonia** 50%. If progress continues this year, these four countries will have reached the target by the 2010 deadline. **France** and **Lithuania** are following closely and, if they step up their efforts, might just reach the target on time. All other countries have progressed to a lesser extent. Only in **Romania** (and in Malta where the small number fluctuates widely) were the numbers of road deaths higher in 2009 than in 2001.

In 2009, road deaths were cut by **11%** across the EU compared to 2008. This has been the **best year-to-year reduction since 2001**. The good news about progress is coming from the Central and Eastern European Countries. **Slovakia** (36%), **Lithuania** (26%) and **Estonia** (24%) achieved the best reductions in 2009 (along with **Denmark** at 25%). In 2009, for the first time, the EU10 with **18%** achieved a better year-to-year reduction in road deaths than the EU15 with 8%.



The adoption of the quantitative target in 2001 has proved to be a turning point in motivating countries, in particular those facing the greatest challenges, to reduce the numbers of people killed on the roads. The adoption of the target has helped to achieve faster progress across the EU compared to previous decades. Now it is the time for the EU to adopt ambitious but achievable quantified targets for reducing deaths and serious injuries by 2020. New EU regulations on cross-border enforcement of traffic rules and the introduction of life-saving technologies -amongst other measures- as recommended in ETSC's Blueprint for the 4<sup>th</sup> Road Safety Action Programme, should be brought forward, past EU laws, such as the Directive on Infrastructure Safety, should be fully implemented by Member States and more EU instruments used to further reduce deaths and serious injuries on our roads.

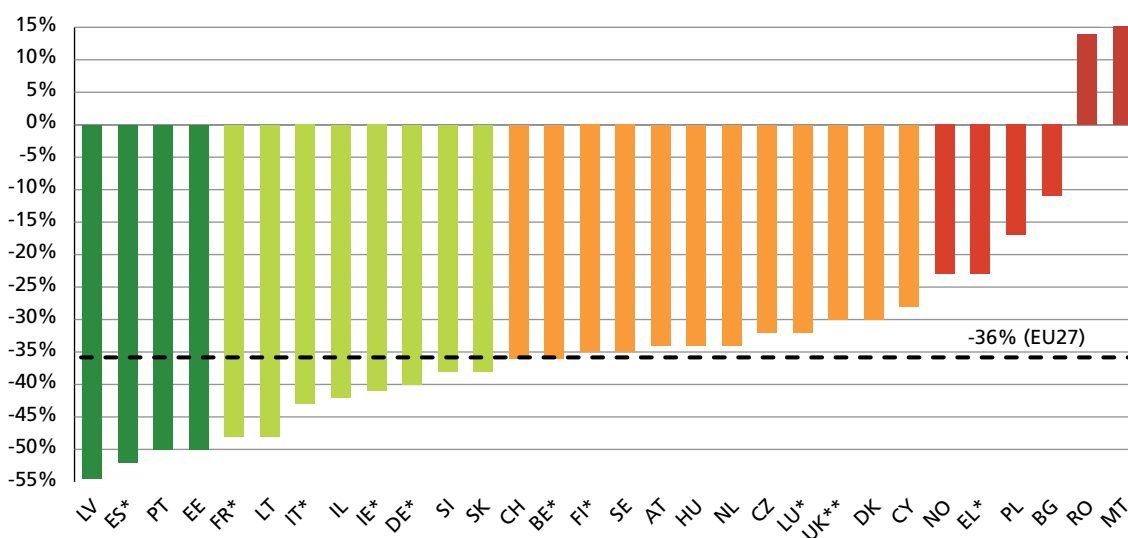


Fig. 1: Percentage change in road deaths between 2001 and 2009

\* Provisional estimates were used for 2009 as final figures for 2009 were not yet available at the time of going to print.

\*\*UK 2009: ETSC estimate for the whole UK based on EC CARE Quick indicator for GB only. The final count for GB will be available on the 24 June 2010 on [www.dft.gov.uk/pgr/statistics](http://www.dft.gov.uk/pgr/statistics).

In Luxembourg and Malta, the numbers of road deaths are small and thus subject to substantial annual fluctuation.

**Latvia, Spain, Portugal and Estonia** have achieved the best reductions in road deaths between 2001 and 2009 (Fig. 1). **Latvia** recorded an outstanding 54%, **Spain** 52%, **Portugal** and **Estonia** 50%<sup>2</sup>. If progress continues this year, these four countries will have reached the target in 2010. **France** and **Lithuania** are following closely and, if they step up their efforts, might just reach the target on time. **France**, which took the lead in reducing road deaths earlier in the decade, has moved back to fifth position as progress slowed down in 2008 and 2009. **Italy, Israel** and **Ireland** achieved reductions over more than 40% since 2001. Good reductions have also been made by countries with a longer tradition of road safety such as **Germany** (40%) and **Switzerland** (36%).

The three Baltic countries, **Latvia** (54% reduction), **Estonia** (50%) and **Lithuania** (48%) are taking the lead amongst the Central and Eastern European countries and in the EU.

In **Romania** (and in **Malta**), however, the number of road deaths was higher in 2009 than in 2001. **Greece** shows the least reduction in the EU15 and has been overtaken by most of the countries that joined in 2004.

<sup>2</sup> To learn about the experience of Spain and Latvia, please see the interviews with Pere Navarro, Director General of DGT at the Ministry of Interior, Spain and Aldis Lama, Road Traffic Safety Directorate, Latvian Ministry of Transport in ETSC (2009), 3<sup>rd</sup> PIN Report. To learn more about Portugal's experience, see Interview with Paolo Marques, President of the Portuguese National Road Safety Authority in ETSC (2008), 2<sup>nd</sup> PIN Report. Estonian Minister, Juhan Parts, gives the background to Estonia's success on p. 18.

*“The shared target at European level helped each Member State to see that its road safety improvements are contributing to addressing a Europe-wide problem. It is great to see how the countries that joined in 2004 have engaged in this challenge. We must not forget, however, that the severity of the economic recession may well have contributed to the 2009 exceptional drop in road deaths in a great number of EU countries.”*

Clas Tingvall, Swedish Transport Administration.

## The Indicator

This ranking uses as main indicators the **percentage change** in the numbers of people killed on the road between 2001 and 2009 (Fig. 1). A person killed in traffic is someone who was recorded as dying immediately or within 30 days from injuries sustained in a collision. We also used **road mortality** as an indicator of road safety (Fig. 4). It refers to the numbers of road deaths per million inhabitants. Countries are also compared according to the numbers of road deaths per billion vehicle kilometres driven (Fig. 6). This indicator is available in 14 Member States, as well as in Switzerland, Norway and Israel.

The data collected to calculate the indicators are from the national statistics supplied by the PIN Panellist in each country. CARE and IRTAD databases were used for verification. Population figures were retrieved from the EUROSTAT database.

The numbers of road deaths in 2009 in **Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Spain** and the **UK** are provisional or estimates as provided by PIN Panelists because final figures were not yet available at the time of printing. The number used for the UK for 2009 is an ETSC estimate for the whole UK based on EC CARE Quick indicator for GB only. The final count for GB will be available on the 24<sup>th</sup> June 2010 on [www.dft.gov.uk/pgr/statistics](http://www.dft.gov.uk/pgr/statistics). Numbers of deaths in **Luxembourg** and **Malta** are small and therefore subject to substantial annual fluctuation. The full dataset is available in the Annexes - Chapter 1.

## 1.1 Catching up in 2009 but too late for the 2010 target

Some **34,900** people were killed in road traffic collisions in the European Union in 2009. This is **19,500** fewer than in 2001, when **54,400** people were killed on EU27 roads, but still more than the maximum of **27,000** which the EU set in 2001 for 2010.

Yet, road deaths in the EU decreased by **36%** between 2001 and 2009. In an international comparison, road deaths have decreased by 42% in Japan, but by only 20% in the USA and 13% in Australia since 2001.

Until 2007, the main contributions to the EU target were being made by the EU15 (Fig. 2). In the last two years, Member States that joined the EU in 2004 (EU10) have improved their road safety level substantially for most of them, impressively for some. They are now starting to deliver their share of the overall reduction, partly through taking advantage of the benefit that the EU accession brings; in particular EU legislation, EU funds and the motivation given by contributing to the EU shared target.

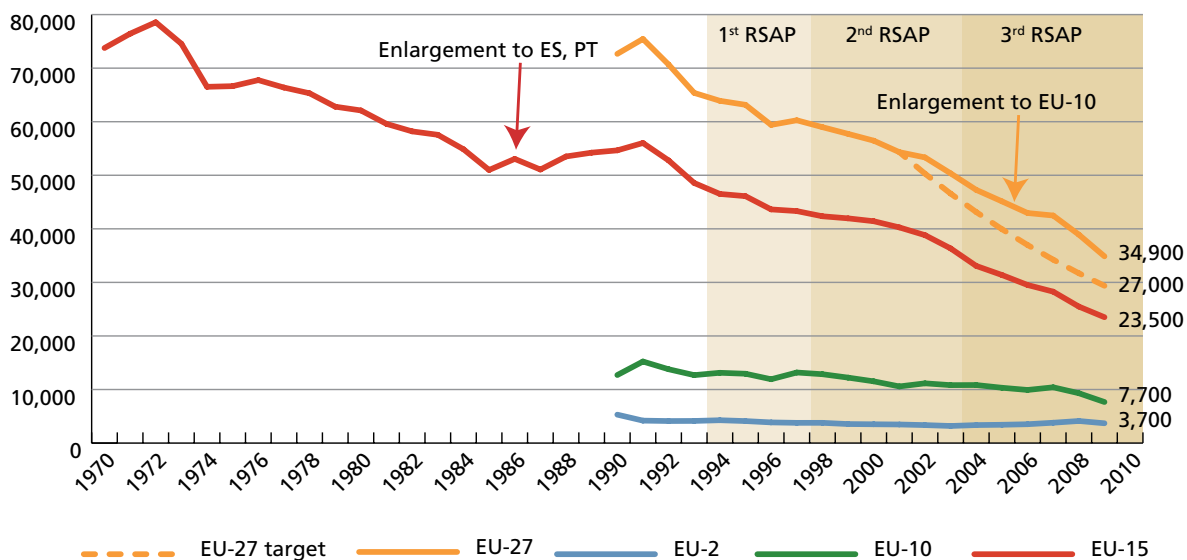


Fig. 2: Reduction in road deaths since 1970 in the EU15 (red line) and since 1990 in the EU27 (orange line), the EU10 (green line) and Bulgaria and Romania (EU2, blue line).

Source: CARE database (except for 2009: PIN data as provided by PIN Panelists).

The adoption of the EU target in 2001 gave a boost to the combined efforts at national and EU level. It provided a continuing stimulus for EU action in areas where the Union has exclusive competency for road safety, and for shared competency with Member States on the other aspects of road safety. As a result, reductions in the number of deaths have been much steeper in 2001-2009 than in preceding decades (see Table 1). Since 2001 and the adoption of the EU target, **78,000** road deaths have been prevented in the EU-27.

Period	EU-15 countries		EU-10 countries	
	Reduction	Annual average reduction	Reduction	Annual average reduction
1971-1980	19%	2.4%	n/a	n/a
1981-1990	8%	1.7%	n/a	n/a
1991-2000	22%	4.0%	18%	1.5%
2001-2009	42%	6.3%	27%	2.0%

Table 1: Reduction in road deaths since 1970 for the EU15 and the EU10.

Source: CARE database (except for 2009: PIN data as provided by PIN Panelists).

## 1.2 Best year-to-year reduction since 2001

### 1.2.1 Outstanding reduction in Central and Eastern European Countries

The number of road deaths in the EU dropped by **11%** in 2009, the largest decrease ever registered for the EU as a whole since the creation of the CARE database in 1993 (Fig. 3). In 2009 for the first time, the EU10 achieved higher reduction (**18%**) than the EU15 (**8%**).

**Slovakia (36%), Lithuania (26%), Denmark (25%), Estonia (24%) and Israel (24%)** achieved the best reductions in 2009 compared to 2008. Road deaths decreased in all countries, except in **Belgium, Luxembourg and Malta**. The last two countries are ones where the numbers of road deaths are small and thus subject to substantial fluctuation.

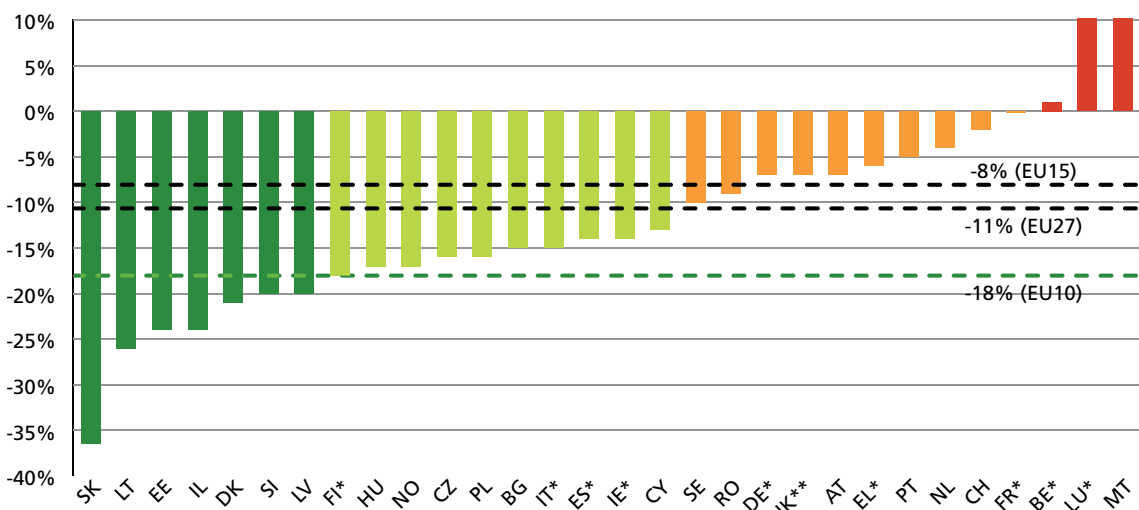


Fig. 3: Percentage change in road deaths between 2008 and 2009

\* Provisional figures or national estimates based on provisional figures for 2009 were not available at the time of going to print.

\*\*UK 2009: ETSC estimate based on EC CARE Quick indicator for GB only.

In Luxembourg and Malta, the numbers of road deaths are small and thus subject to substantial annual fluctuation.

With a 36% reduction in road deaths, **Slovakia** recorded last year the largest single year drop for any PIN country since 2001. Up to 2009, road deaths have been stable at around 600. In 2009, the reforms introduced earlier started to bear fruit. An inter-ministerial Road Safety Council was created in 2005 and a first National Road Safety Plan was adopted in the same year. Enforcement and penalties have been raised for drink driving. The media have also helped to raise the level of disapproval of traffic offences amongst the public. Since 2008, traffic education has been given a new emphasis at schools and children have been offered first-hand experience on traffic playgrounds. Still, pedestrians form a high share of all road deaths (around one third). The Ministry of Transport has therefore developed road safety campaigns targeting pedestrians in order to raise their awareness of the importance

of wearing reflectors at night. Finally, the motorway network is being extended each year (typically 30km of new motorways are being built each year) to improve safety standards.

*“Road deaths continued to decrease in the first half of 2010, following the entry into force of a new Road Traffic Law in February 2009. We now have some of the highest penalties in the EU. Police enforcement has increased greatly and the Police were supplied with brand new equipment for speed and drink driving detection”.*

Karol Meliska, Ministry of Transport, Slovakia.

**Lithuania** has seen a 26% drop in road deaths in 2009, following a 33% reduction in 2008. Penalties for major traffic offences have been increased. A drink driving zero tolerance policy was enacted under which drunk drivers see their licence withdrawn immediately. The legal BAC limit is now 0.2g/l for novice and professional drivers (compared to 0.4g/l for the other drivers). Deaths attributed to drink driving decreased by 26% in 2009 compared to 2008.

In Denmark, the reduction was marked in particular for cyclists and moped riders. *“These two groups of vulnerable road users accounted for almost half of the overall reduction in road deaths in 2009. Speed checks as well as sanctions for moped riders were increased. Recent road safety campaigns targeted these two groups. We are glad to see that our systematic action to provide better protection for vulnerable road users is starting to bear fruit”*. Jesper Sølund, Danish Road Safety Council.

In **Estonia**, road deaths dropped by 24% in 2009, following a 33% decrease in 2008. These good results have been helped by the implementation of a comprehensive set of measures including more enforcement, education and infrastructure remedial schemes. In 2009, the first safety cameras were installed and since 1<sup>st</sup> of May 2010, offenders started to be fined for speeding. Further progress is expected as the network of safety cameras will be expanded (see Interview with Minister Juhan Parts p. 18).

*“At the PIN Talk in Tallinn on the 5th of May we discussed the reasons for those two consecutive years of impressive decrease. It cannot be explained by a decrease in km driven as this remained stable. We have recently run a survey that shows that Estonian drivers have changed their behaviour regarding speed. They agree with the introduction of speed cameras and want the government to do more”*.

Dago Antov, Tallinn Technical University.

Road deaths decreased by 15% in 2009 in **Bulgaria**, following a 5% increase in 2008. The decrease has been helped by the implementation of stricter road safety measures. Fines and sanctions were tightened up for major traffic offences (speeding and drink driving). *“The commitment of non-governmental organisations and the support of media are helping Bulgarian drivers to progressively change their behaviours on the roads”*. Aleksí Kesiakov, Secretary of State for Transport, Bulgaria.

In Italy, road deaths decreased by 14% in 2009 compared to 2008. *“This is the result of a more coordinated and systematic approach to road safety. Police enforcement increased, together with road safety information campaigns. The reform of the Traffic Code –even if only partial- will hopefully remove the final obstacles for the implementation of the measures foreseen in our National Plan”*. Carla Messina, Ministry of Infrastructure and Transport, Italy.

In **Romania**, there was a decrease in road deaths (by 9%). Most of the decrease can be explained by increased Police checks, coupled with national road safety campaigns. Old cars are progressively taken out of the roads. A joint campaign of the Traffic Police and the National Vehicle Register encouraged the renewal of the car fleet. *“Romania also benefitted from the exchange of good practice between EU Member States, following our accession in 2007”*. Madalina Stoenescu, Interministerial Council for Road Safety, Romania.

## 1.2.2 ... with some disappointing results in a few other EU countries

Ten more people were killed on the roads in **Belgium** in 2009 than in 2008 (955 deaths in 2009, compared to 944 in 2008). Belgium has one of the newest car fleets running on one of the densest motorway networks in the EU, but its roads are still far from being the safest. Road deaths have decreased by 36% since 2001, yet still 89 people are killed per million population (compared to 70 in the EU27). Much work still needs to be done to improve on this. Key issues include tackling the relatively low level of seat belt wearing, increasing compliance with speed limits and tackling the level of driving whilst under the influence of alcohol and drugs. Efforts must also be made to upgrade the safety levels of the infrastructure above and beyond the requirements set in the new EU Directive on Infrastructure Safety Management.

**France**, which took the lead in reducing road deaths earlier in the decade, has lost its lead role as the driving force of the contribution to the EU target. In 2009, 4,262 people lost their lives on French roads, almost as many as in 2008 and still far more than the maximum of 3,000 deaths set by President Sarkozy for 2012. Dangerous intersections and other high risk sites are being treated progressively, but a lot still needs to be done in improving infrastructure safety, as assessed by EuroRAP in a recent study<sup>3</sup>. The Inter-ministerial Committee for Road Safety adopted earlier in 2010 a series of new measures addressing speeding, drink driving, motorcyclists, novice drivers and occupational safety in an attempt to address this worrying pause in the reduction of road deaths.

The pace of reduction has also slowed down in **Switzerland**, the **UK** and the **Netherlands** compared to 2008.

### The effect of the economic crisis on road safety in Europe

In 2009, the European economy contracted in an unprecedented manner, as did the number of road deaths. But was the latter drop a by-product of the crisis, or not?

It is tempting to assume that there is a link between the performance of the economy and the number of road deaths, based on the thesis that economic activity generates road traffic which leads to more accidents and so the reverse should also be the case.

Testing this relationship statistically for our data at country level suggests that there is a medium correlation between the annual change in GDP in real terms and the annual change in road deaths registered between 2008 and 2009 in individual countries. This suggests that economic performance may well have a real impact on road safety in a country, but by no means completely determines its overall road safety performance.

In Sweden the relationship between economic trend and road safety has been analysed in a study commissioned by the Swedish Transport Administration to the Swedish National Road and Transport Research Institute (VTI). The background was that when the economic trend went down during autumn 2008, the number of road deaths decreased by more than 40%, far more than the reduction in vehicle mileage. However, the study was not able to explain that decrease by changes in travel patterns, less young drivers on the roads, nor by a decrease in heavy vehicle mileage. The study did however show that unemployment was negatively correlated with the number of road deaths even when compensating for the change in vehicle mileage.

<sup>3</sup> EuroRAP (2010), How Safe are Europeans on French Roads this Summer? [www.eurorap.org/library/pdfs/20100524\\_Low-Res\\_French\\_Report\\_Final.pdf](http://www.eurorap.org/library/pdfs/20100524_Low-Res_French_Report_Final.pdf).



### 1.3 Road safety league

**Sweden**, the **UK** and the **Netherlands** remain the safest EU countries for road use (Fig. 4). **Sweden** reached a historically low level of road mortality with 39 people killed per million inhabitants. **Switzerland** and **Norway**, among the frontrunners in Europe for some time, have been joined by **Israel**. **Germany** remains close on the heels of the leading group. **Malta, Finland, Ireland, Denmark, Spain, France, Italy** and **Slovakia** now have lower than average levels of road mortality.

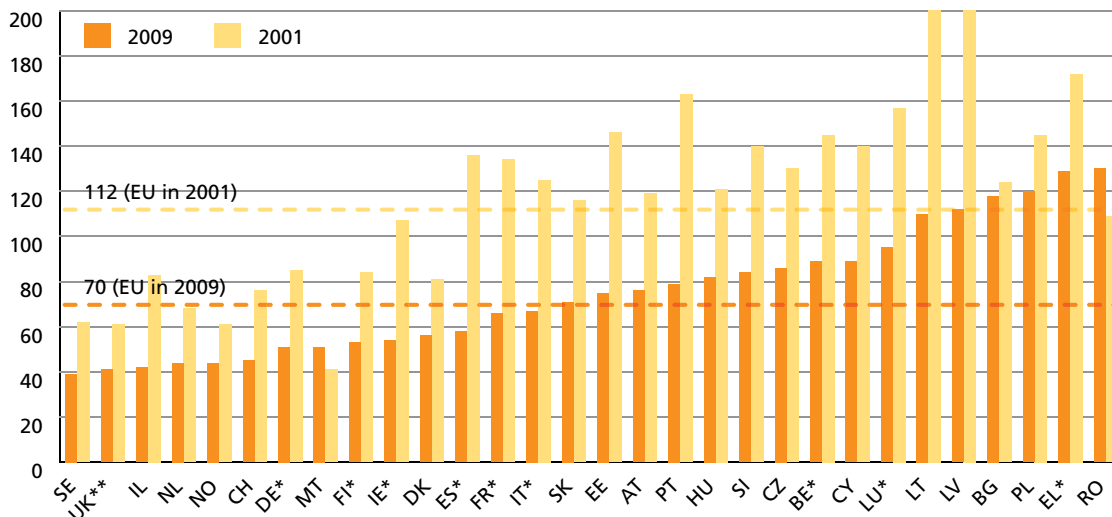


Fig.4: Road deaths per million inhabitants in 2009 (with road deaths per million inhabitants in 2001 for comparison)

\* 2009: Provisional figures or national estimates based on provisional figures as final figures for 2009 were not yet available at the time of going to print.

\*\*UK 2009: ETSC estimate based on EC CARE Quick indicator for GB only.

In the EU in 2009 there were 70 people killed per million inhabitants compared to 112 in 2001. Disparity in road mortality rates across Europe has decreased since 2001, and in 2009 there was no longer any EU country with road mortality higher than 130 deaths per million inhabitants.

There is still a threefold difference in road mortality between **Sweden** and **Romania**. The upcoming Road Safety Action Programme should aim at further reducing the gap between the road safety champions and the countries facing the greatest challenges, in particular with the prospect of new accession countries in the next decade.

*“Germany is now 4th out of the 27 EU Member States in road deaths per million population (it was 6th in 2001). Major progress has been made in reducing car occupants’ deaths thanks to improved car design and the fitting of driver assistance systems such as Electronic Stability Control. The biggest challenge today is to reduce the amount of young drivers killed on our roads. Several new measures have been introduced recently targeting this high risk group: a probationary license, the possibility of accompanied driving and a zero alcohol tolerance for novice drivers. We hope that those measures will help us reduce road carnage amongst young drivers.”*

Christian Kellner, German Road Safety Council (DVR).

In the EU-27 in 2009 70 people per million inhabitants were killed on the roads, compared to 67 in **Australia**, but 110 in the **USA**. The reduction in road deaths between 2008 and 2009 was greater in the EU27 (11%) than in the USA (9%) and in Australia (4%) (IRTAD).

European roads now belong to the safest in the world. A few developed countries are still ahead and show examples to follow. **Japan**, for instance, registered 45 deaths per million inhabitants in 2009, a figure comparable to Sweden, the United Kingdom and the Netherlands.

## 1.4 Recent road mortality versus annual reduction over the last decade

In Fig. 5, road mortality in each of the 30 PIN countries is plotted horizontally against the estimated average annual percentage change in road deaths over the period 2001-2009. The EU averages of the two indicators are used to divide the diagram into four quadrants.

**France, Spain, Germany, Switzerland, Israel, Italy** and the **Netherlands** achieved lower than average mortality after higher than average reductions. The above-average progress made by **Portugal, Luxemburg, Latvia, Belgium, Estonia** and **Austria** over the period 2001-2009 has not been quite sufficient to bring them into the favourable lower left quadrant. **Malta, the UK** and **Norway**, have lower than average mortality despite lower than average progress in reducing road deaths. **Romania, Bulgaria, Poland** and **Greece** not only have high mortality rates, but were also scarcely able to reduce them over the past decade.

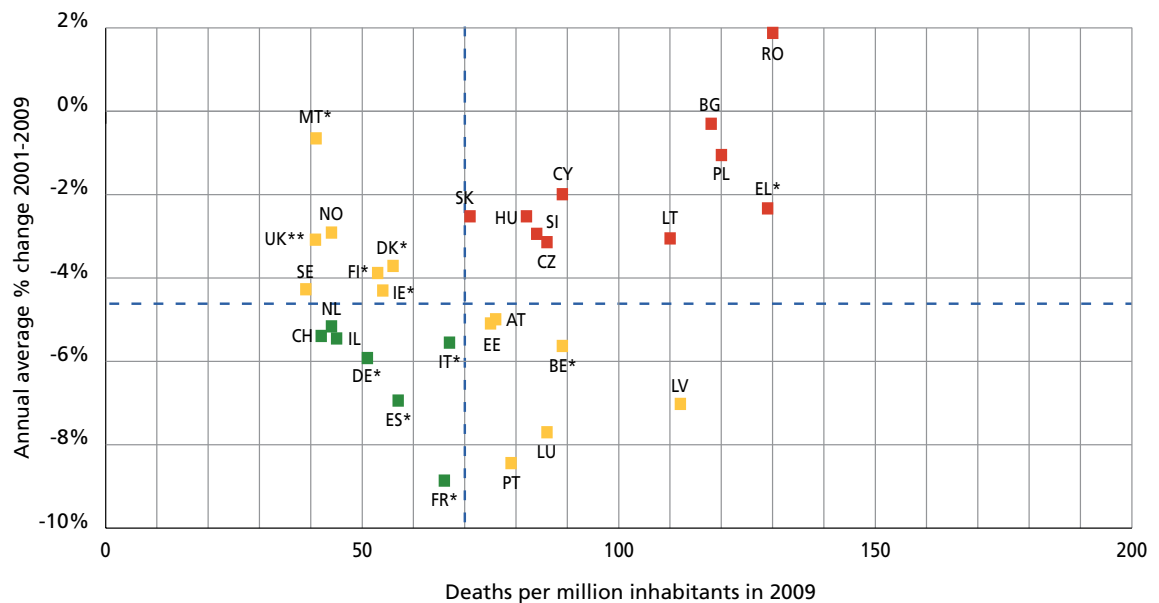


Fig. 5: Road mortality in 2009 plotted against the percentage change in road deaths over 2001-2009.

*Malta, Luxembourg: Road mortality 2009 = average of 2007, 2008 and 2009.*

*\* Provisional estimates were used for 2009 as final figures for 2009 were not yet available at the time of going to print.*

*\*\*UK 2009: ETSC estimate based on EC CARE Quick indicator for GB only.*

## 1.5 Deaths per billion vehicle kilometres travelled

Fig. 6 shows deaths per billion vehicle-kilometres travelled for the 19 countries where data on vehicle-km travelled are available. It provides a complementary indicator of road safety level, beside the well-established indicator of road mortality.

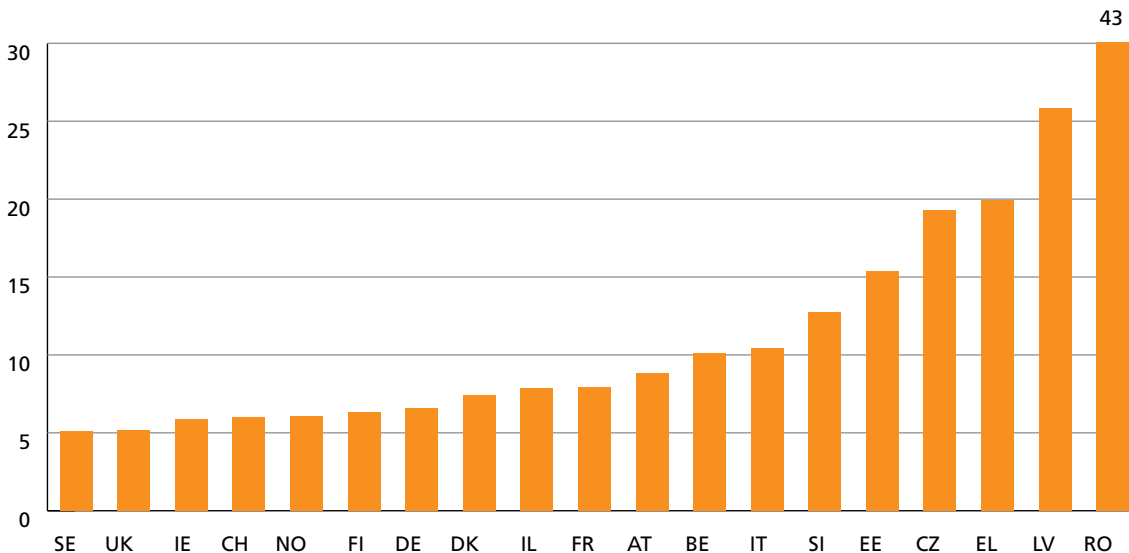


Fig. 6: Number of road deaths per billion vehicle kilometres driven.

Road deaths: average of years 2007, 2008 and 2009.

Estimated number of vehicle kilometres driven: 2008 or latest available year

IT: Estimated number of vehicle kilometres driven is based on passenger cars only

**Sweden, the UK, Switzerland, Norway and Germany** keep their leading position also when looking at number of deaths per billion vehicle-km travelled. There is a higher than eightfold difference in road risk between **Sweden** and **Romania**.

**Ireland, Finland and Slovenia** perform relatively better in terms of road deaths per billion vehicle-km travelled than per million inhabitants, while in **Israel, Estonia and Czech Republic**, the opposite is true. These differences might be due to differences in the amounts of walking, cycling or motorcycling, the proportions of traffic on motorways or rural roads, the traffic density, the method used to estimate the number of vehicle km travelled, and many other aspects.

*“Israel is better placed in the ranking road deaths per population because of our low levels of motorisation”*

Shalom Hakkert, Ran Naor Foundation for Road Safety Research.

## 1.6 Interviews

### 1.6.1 The Estonian experience

Estonia and Ireland have been recognised with the “2010 Road Safety PIN Award” at the 4<sup>th</sup> ETSC Road Safety PIN Conference on the 22<sup>nd</sup> of June for their sustained successful strategies in reducing road deaths. Road deaths have been cut by half in Estonia since 2001, the fourth best reduction in road deaths among EU countries. But little is known about road safety policy in this Baltic State who joined the EU in 2004. ETSC talked with Mr. Juhan Parts, Minister of Economic Affairs and Communications of the Republic of Estonia, to learn more about past and future road safety challenges in the country.

*ETSC: Concerns for road safety have been recognised only relatively recently by the Estonian government. In 2007 Estonia adopted its first multi-annual Traffic Safety Action Plan and road deaths have dropped steeply since. What is the background to this?*

*Minister Parts:* The need for a systematic approach towards road safety has been recognised by the Estonian government only relatively recently. In 2002, Estonia adopted its first Traffic Safety Programme which, however, lacked concrete actions and a responsible body for implementation. A new Traffic Safety Action Plan was adopted for the period 2008-2011. A traffic safety department was set up to implement and evaluate Estonia’s road safety strategy. A high level inter-ministerial road safety commission was created, gathering all the relevant Ministries, the police and road safety experts from different fields.

*ETSC: Which are the actions that have been implemented successfully?*

Enforcement of major traffic offences, in particular speeding and driving under the influence, was intensified in combination with campaigns. Driving speeds started to decrease, as well as drivers caught after drinking. Road safety education is given to all Estonians pupils from Kindergarten to high school. Teachers have received a special training on road safety. Thematic media campaigns have been organised around speeding, the use of safety equipments, drink-driving, the importance of wearing reflective vests and using zebra crossings as pedestrians.

In parallel, the Estonian Road Administration has conducted an extensive high risk site removal scheme for the last four years, following advice from our Crash Investigation Expert Commission.

*ETSC: A lot still needs to be done to sustain progress. What are the most pressing priorities to reduce the high level of road mortality?*

In 2009, the first 16 safety cameras were installed and since 10<sup>th</sup> of May 2010, offenders started to receive fines for speeding. The next step is now to expand the network of the safety cameras to cover an additional 160 km of dangerous road sections with automatic speed control in 2010-2011.

We recently ran a survey that shows how Estonian drivers have changed their behaviour regarding speed. They agree with the introduction of speed cameras and want the government to do more. Respondents are ready to accept soft speed management measures (training, education, information) and a majority of them will also accept hard measures like the extension of the safety camera network, increased police enforcement and higher fines. We hope that the safety cameras, together with improved drivers’ attitudes, will help us save more lives on our roads in the coming years.

*ETSC: How much would you say the EU helped Estonia to reduce deaths? How can the EU help countries that face the most pressing challenges in road safety? What do you expect from the 4th European Road Safety Action Programme?*

We have received a lot of help through the exchange of experiences and best practices with different EU countries like Sweden, Finland, Latvia, Lithuania and others. We have carefully applied the different EU Directives and regulations on driving and resting time, technical requirements for vehicles, driving licenses thereby improving the road safety situation on our roads. The EU can help countries through the exchange of information and best practices between Member States.

The 4<sup>th</sup> European Road Safety Action Programme should adopt ambitious goals for the next decade, together with strong measures to achieve them. It is important not only to focus on road deaths but also on injuries. Special attention should also be given to collisions in cities, where most Europeans live.



Mr. Juhan Parts is a former Prime Minister for Estonia (2003-2005). Since 2007 he has been Minister of Economic Affairs and Communications.

Website of the Ministry of Economic Affairs and Communications:  
<http://www.mkm.ee/en>.

### 1.6.2 The Irish experience

Ireland and Estonia have been recognised with the “2010 Road Safety PIN Award” at the 4<sup>th</sup> ETSC Road Safety PIN Conference on the 22<sup>nd</sup> of June for their sustained successful strategies in reducing road deaths. Since 2001, Ireland has seen a rapid improvement of road safety, with deaths down by 41%, following the implementation of a comprehensive set of road safety measures. Road deaths per million population were cut by half from 107 in 2001 to 54 in 2009. Ireland is now 7<sup>th</sup> out of 27 Member States in road deaths per million population. Mr Noel Dempsey T.D., Minister for Transport and Noel Brett, Chief Executive of the Road Safety Authority (RSA) explained to ETSC how Ireland authorities are committed to road safety.

*Minister Dempsey:* I'd like to pay tribute to road users in Ireland for the manner in which they have embraced road safety and taken personal responsibility for their own behaviour on our roads. Government has prioritised road safety through national road safety strategies which sought to deliver on engineering, education and enforcement measures. The work of An Garda Síochána and the Road Safety Authority has played a major role in making our roads safer. It is no exaggeration to say that many people are alive today that would not be with us if it wasn't for the various measures put in place by the RSA and An Garda Síochána and their absolute commitment to the objective of “Working to Save Lives”. We now must avoid the pitfall of complacency at a political and road user level.

Ireland's success was built largely on the adoption and effective implementation of our latest Government Road Safety Strategies Plans 2004-2006 and 2007-2012. In January 2006 the Taoiseach set up a Cabinet Level Committee on Road Safety chaired by the Minister for Transport and attended by five other Ministers, their supporting officials, the Attorney General, Garda Commissioner and the CEO of the RSA. This structure builds on political leadership and oversight political arrangements in best practice countries. The Road Safety Authority was set up with a core focus on developing, implementing and evaluating Ireland's road safety strategy.

The Government Road Safety Strategy 2007-2012 set the aim to reduce deaths, injuries and collisions on Irish roads by 30% and reduce to 60 road deaths per million inhabitants or a maximum of 252 deaths or better per year. With 241 people killed in 2009 (compared to 411 in 2001) this target has been achieved ahead of the deadline. The Road Safety Authority is committed to maintaining and improving on these targets in collaboration with all its partners in road safety especially the Irish public.

*ETSC: On St. Patrick's Day, the RSA rebroadcast the first ever hard hitting anti-drink driving advert entitled 'Shame' to mark the fact that it was first aired 10 years ago in 2000. What have been the key developments in addressing drink driving in Ireland? What remains to be done?*

*Minister Dempsey:* One of the most important measures was the introduction of Mandatory Alcohol Testing (MAT) in 2006 and tougher penalties for drink driving offences in 2007. To enforce this new legislation the number of the Traffic Corps police officers has increased from 500 to 1,200 since 2004. Finally, this legislation has also been underlined by educational campaigns. In Ireland we have used a strategy of employing hard hitting mass media TV campaigns, such as 'Shame', to change attitudes and behaviour towards drinking and driving. These campaigns have brought about a progressive cultural shift against drinking and driving in terms of understanding its detrimental effects on road safety, support for more enforcement of more severe penalties and support for a lowering of the permitted BAC.

The Irish Government is committed to lowering the maximum legal blood alcohol concentration (BAC) limit. I presented a Bill to the Irish Parliament to reduce the legal BAC limit from 0.8g/l to 0.2 for learner, novice and professional drivers and to 0.5 for all other drivers. The Road Traffic Bill 2009 also introduces mandatory alcohol testing of drivers involved in collisions. The Bill is currently being discussed in the Irish Parliament.

*ETSC: Minister Dempsey, you just announced at an international conference on speed on the 31st of May the roll-out of the safety camera network later this year.*

*Minister Dempsey:* The safety cameras will be operational from October 2010. The operation has been awarded to GOSAFE. The responsibility for the safety camera network lies with the Garda Office. RSA research revealed that speeding was directly responsible for 80 deaths on Irish roads last year. It is also a factor in the remaining 160 deaths, 1,000 serious injuries and anything up to 7,000 minor injuries. Reducing speed by just 5% could save almost 50 lives and prevent up to 100 serious injuries on Irish roads every year.

*“We have seen how effective safety camera networks are in other EU countries at reducing overall speed on the road and protecting road-users. In Ireland, enforcement will be focused on speed enforcement zones on the road network which have a history of speed related death and injury. It's important to note that the operator will be paid on the basis of the number of hours spent enforcing speed limits and not on the basis of detections. This is about saving lives and preventing injuries, not about catching people”.*

Superintendent Con O'Donohue, Garda National Traffic Bureau.

*“We should never lose sight of the reasons why we continue to invest our time, energy and money into road safety. We want to reduce needless suffering on families across the country and it is this objective that really underpins our own road safety strategies.”*

Minister Noel Dempsey.

*ETSC: Infrastructure is key in helping drivers comply with the speed limit. What was the progress made in improving infrastructure safety in Ireland?*

*Minister Dempsey:* Infrastructural measures to make Irish roads safer are a key component of the current Government Road Safety Strategy. The National Road Authority (NRA) and the local authorities around the country have continued with an extensive new road building campaign, as well as improving the safety of existing roads including treatment of high collision locations and traffic calming measures.

The NRA's Road Safety Unit, in conjunction with local authorities, completed 126 remedial schemes in 2008, including junction improvements; bend definition, pedestrian crossings, and traffic calming and management schemes. In 2008, a further 7 million Euros were provided to the 36 local authorities under the Low Cost Safety Improvements Scheme for safety measures at high collision locations.

The NRA's Public Private Partnership programme is recognised internationally as being one of the best in the world. It is a tribute to the success of the programme to date that the Government has authorised the NRA to raise a further 1 billion Euros in private sector funding for the construction of a new tranche of PPP projects.

*What measures have been taken in particular to protect vulnerable road users?*

*Noel Brett:* In 2008, 29 motorcyclists were killed and a further 494 injured on Ireland's roads, accounting for 10% of all deaths, and almost 5% of all casualties. This is of particular concern since motorcycles accounted for less than 2% of all licensed vehicles. A dedicated Motorcycle Safety Action Plan 2010- 2014 is soon to be published. The issues identified, subsequent targets set, and 27 separate actions have been informed by the results of an in-depth analysis of motorcycle collisions over the period 1997 to 2006, and are supported by research and best practice from EU countries and beyond.

A dedicated Pedestrian Road Safety Action Plan is also soon to be published. In 2008 49 pedestrians were killed and a further 1124 injured accounting for 18% of all deaths and 12% of all casualties. Walking is a fundamental activity among all road users, with every journey comprising at least some element of pedestrian activity. This draft Action Plan identifies targets to be achieved and 43 separate actions to reduce pedestrian deaths and injuries.

The Department of Transport has developed a National Cycling Policy Framework document which highlighted the requirement for a mass media campaign on cycling safety as well as other recommendations under Education, Engineering and Evaluation. The objective is to make cycling a safe and attractive option for recreational cyclists and for those commuting to work by bike, taking into consideration other road users.

*ETSC: What are the new challenges you are facing?*

*Noel Brett:* Drug Driving. The number of collisions involving a road user under the influence of drugs has risen from 77 in 2004 to 723 in 2008. The current legislation provides for the offence of driving whilst impaired through drugs or alcohol but it is difficult for the Gardaí to take prosecutions as the Police must prove the presence of drugs. The Road Safety Strategy requires the expansion of the forensic analysis programme for driving under the influence of drugs, the establishment of education programmes and campaigns, the review of legislation on the issue of driving under the influence of drugs and the development of appropriate enforcement options. The new Road Traffic Bill 2009 will provide for preliminary impairment testing at the roadside for the Gardaí. In the interim there is a need for the Irish public to be made aware of the dangers of impairment inducing drugs and driving and an awareness campaign will commence in July.

*Noel Brett:* We are also facing an increasing use of mobile phones while driving. A 2009 survey revealed disturbing results. Among 1,000 drivers, 1 in 10 people say they send text messages while driving. 1 in 5 drivers admitted to using hand-held mobile phone at least sometimes when driving and 1 in 20 regularly. The use of hands-free mobile phones is more common with 1 in 5 drivers saying they often or always use them when driving. Research suggests that using a hands-free phone is no safer than using a hand-held one.

Penalty points for driving while holding a mobile phone came into force in 2006. It is now the second highest penalty point offence after speeding, with almost 90,000 offences recorded up to April 2010. This represents an increase of over 22,000 in just 12 months since April 2009. To advise drivers of the dangers of driving while using a mobile phone, the RSA has produced a radio ad currently running on national and local radio stations.

In the current economic climate we also face challenges in ensuring that the roadworthiness and quality of the national vehicle fleet does not deteriorate and that the built infrastructure is maintained.

*“Ireland authorities and road users have demonstrated their firm commitment to enhancing safety. It is important that they do not feel complacent now. Ireland will see further road safety improvements if swift progress is made in rolling-out of the safety camera network and the change of the BAC limit. This will allow Ireland to further close the gap with the EU road safety champions”.*

Antonio Avenoso, ETSC Executive Director



Noel Dempsey has been Minister for Transport since June 2007 and a Teachta Dála (TD) for the Meath West constituency.



Noel Brett has been CEO of the Road Safety Authority since its establishment in September 2006.

[www.rsa.ie](http://www.rsa.ie).

The 2007-2012 Road Safety Strategy and the RSA Annual Review of Progress are available at <http://www.rsa.ie/Utility/About-Us/Our-strategy/>



ETSC spoke with MEP Grosch, Member of the TRAN Committee and Rapporteur in the European Parliament for the Report on "A Sustainable Future for Transport". This Report will no doubt influence the EU's White Paper on Transport. Commissioner Kallas announced that the White Paper is due to be published at the end of 2010. The 2001 White Paper has played an important role in guiding EU road safety policy in the past decade as it set the EU target of halving road deaths by 50% by 2010.

*ETSC: How important do you think the EU target of halving road deaths was in spurring on the EU countries to reduce road deaths?*

Almost all EU27 countries achieved a reduction in the number of people killed on the roads since 2001 and a large majority of them achieved reductions in both the numbers of people killed and seriously injured. The adoption of a common EU Target to reduce road deaths by 50% between 2001 and 2010 has clearly contributed to those impressive results.

Benchmarking across countries, such as the Road Safety PIN, and continued road safety awareness will further contribute to motivate all Member States to continue their efforts in the future.

*ETSC: In your report you stress the need for compliance with "clearer, more measurable targets". ETSC much welcomed that you included road safety as your first priority. What importance do you attach to achieving road safety targets amongst others in transport?*

Safety, especially road safety, is an absolute priority because the deaths or injuries to people on our roads are almost 100% preventable. For me, safety plays a much higher role than economic aspects and doesn't stand in conflict with other transport policy objectives, such as environmental friendliness and the improvement of working conditions and other social aspects. Making safety a first priority is more than a mere matter of belief, as safety preserves the highest good of mankind: life and health.

I have included the principle of clear and measurable targets in my report on the sustainable transport policy for 2020 among other integrating targets for CO<sub>2</sub> emissions and for bus and rail transport in cities. So of course, I've also included a target for safety. This will allow an *a posteriori* analysis of the concrete results achieved.

*ETSC: MEPs in the Transport Committee adopted on June 1st a strong compromise amendment on road safety target setting proposing: "a 40% reduction in the number of deaths and serious injuries of active and passive traffic users on the roads from 2010 to 2020; this target should be laid down in both the forthcoming White Paper on Transport and the new Road Safety Action Programme." What do you think is the importance of setting EU targets and accompanying measures to reduce serious injuries?*

I quickly understood that the EU should include a target for the reduction of seriously injured people alongside deaths, to reduce the unacceptable current number of seriously injured people (around 300,000 each year). In addition to information on road deaths, data on collisions with serious injuries add to a better understanding of the dynamics of accidents and how they come about. Statistics and analysis inform the drafting of proposals to improve the situation. Research findings supported by modern technologies could also help contribute to overall preventative measures. Not least, accident investigation creates a great opportunity to help organisations - in particular emergency care at the accident scene - specifically to check their efficiency and close existing gaps.

A transport policy is only successful if it is directly linked to systematic efforts to reduce the number of people killed and seriously injured in traffic.

*ETSC: Road Safety is one of the strategic priorities set to guide the work of the European Parliament's Transport Committee in the next years. Which priority measures would you like to see listed by the European Commission in the coming decade within its next Road Safety Action Programme?*

The priorities seem to me to define and standardise criteria for data collection and its transfer, in particular data on the circumstances of road collisions. This is the most valuable input for policy guidance and should be mandatory.

In addition, the following points should be prioritised in the upcoming Road Safety Action Programme 2011-2020:

- Financial incentives should be created for research and development, for advanced technologies and intelligent transport systems application, as well as information and prevention measures,
- Quality control of education and training should be further harmonised in the transport sector,
- Penalties and sanctions for crimes that pose a grave threat to safety should be harmonised across the EU,
- There should be an increase of the general acceptance of rules for maximum speed limits and maximum limits for the consumption of alcohol and drugs or other intoxicating substances,
- Infrastructure projects (construction of new roads or repair of existing roads) should put safety requirements first;
- People with reduced mobility should be given special attention and protection.

To increase the pursuit for higher road safety, data concerning road risks should be made public each year as part of a major event and an "Oscar" awarded for safety, similar to the Road Safety PIN Award, which could be then awarded in different disciplines.



Mathieu Grosch has been a Member of the European Parliament since 1994. He is the coordinator of the EPP in the Committee on Transport and Tourism.

## 2| Set targets for serious injury reduction in Europe

In addition to the **35,000** people killed in road collisions in the European Union, about **1,700,000** people are recorded as injured in police records each year, among them **300,000** seriously<sup>4</sup>. Road deaths represent only the “tip of the iceberg” of traffic collisions. For every road death in the EU, at least **44** road injuries are recorded, of which **8** are categorised as “serious”. Involvement in road accidents is one of the leading causes of death and hospital admission for EU citizens under 45 years of age<sup>5</sup>.

Today, thanks to more protective vehicles, better emergency response and medical progress, many deaths are prevented but the survivors remain and many are seriously injured. European and national decision makers should not neglect this less-publicised part of the real picture by referring only to road deaths.

Yet, EU comparisons are hampered because both the levels of injury reporting and national definition of a serious injury vary greatly among countries. The magnitude of underreporting undermines proper allocation of resources to preventive measures. Improving the quality of data about seriously injured survivors of road collisions is key to designing more effective safety policies. **Sweden** is taking the lead in linking police and hospital data and wishes to start using its number of seriously injured recorded by hospitals for international comparison.

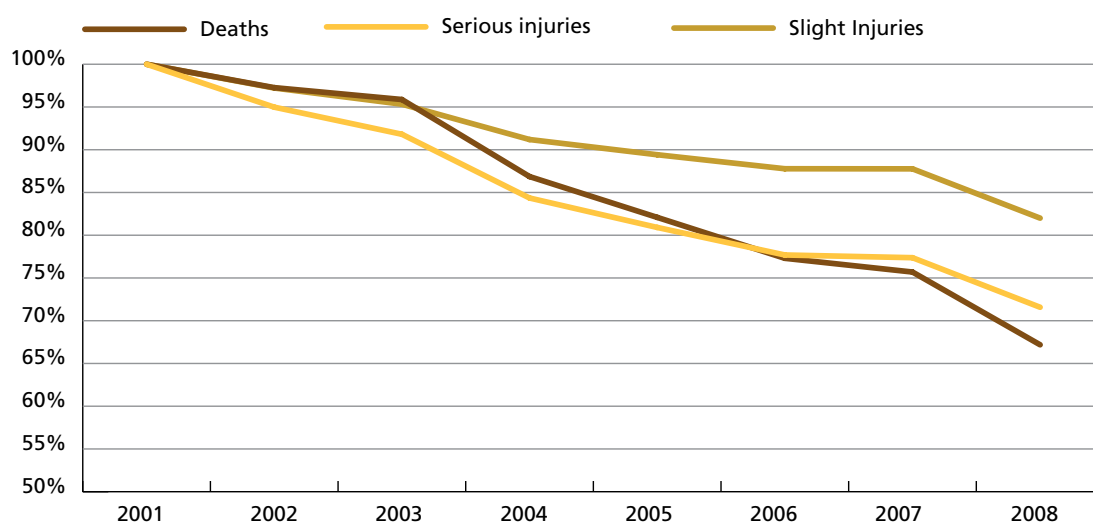


Fig. 7: Relative reductions in deaths, serious and slight injuries in 14 EU countries taken together over the period 2001 to 2008. (2001 = 100%)

Countries considered (Belgium, Cyprus, Czech Republic, Denmark, Germany, Greece, Ireland, Luxembourg, the Netherlands, Portugal, Slovakia, Spain, Sweden and the UK) use a similar definition of serious injuries. Police data except Sweden (hospital data). Latvia and France are excluded because although they now also use 24 hours as in-patient for serious injuries, they have done so only since 2004.

ETSC believes the new Road Safety Action Programme 2011-2020 should include challenging **targets for the reduction of seriously injured people alongside a target for continued reduction in deaths**. ETSC is proposing a dual track approach<sup>6</sup>. Each country should aim to reduce serious injuries, according to its own definition, at the same pace as deaths. At the same time, the EU should work towards the adoption of a common definition of serious injuries to foster EU comparison. In parallel, Member States should improve the recording of serious injuries by making use of both police and hospital records.

<sup>4</sup> CARE data base 2008.

<sup>5</sup> EC Public consultation on the European Road Safety Action Programme 2011-2020.

<sup>6</sup> ETSC (2008), Blueprint for the 4<sup>th</sup> Road Safety Action Programme.

## The indicator

It is not yet possible to compare the number of seriously injured between Member States because of the different definitions of serious injuries together with differing levels of underreporting. This comparison therefore takes as a starting point the changes in the number of serious injuries since 2001 compared to the changes in the number of deaths over the same period.

We give priority to serious injuries rather than slight or total injuries because of the greater impacts of serious injuries on society. Moreover serious injuries are more likely to be reported to the police than slight injuries<sup>7</sup>.

Numbers of seriously injured were supplied by the PIN Panellist in each country using their national definition of serious injuries. National definitions as provided by Panellists are available in the Annex. All PIN countries collect data on "serious injuries" with the exception of **Estonia, Finland, Italy<sup>8</sup>** and **Lithuania** where no distinction is made between "serious" and "slight" injuries. 16 Member States, **Belgium, Cyprus, Czech Republic, Denmark, Germany, Greece, Ireland, Luxembourg, France, Latvia, the Netherlands, Portugal, Slovakia, Spain, Sweden** and the **UK**, as well as **Switzerland** and **Israel<sup>9</sup>**, use similar definitions of severe injuries, spending *at least one night in hospital as an in-patient* or a close variant of this<sup>10</sup>. In practice, however, in most European countries, there is unfortunately no standardised communication between police and hospitals and the categorisation as "serious" is often made by the police. All PIN countries, with the exception of Sweden, provided numbers of seriously injured recorded by the police. In the case of **Sweden**, the number of seriously injured recorded by the hospitals was used throughout the report. Numbers based on police reports are shown in Fig. 10 only for comparison.

With the definition of a serious injury applied in this report, a wide range of injuries are considered under the same definition within each country. They range from lifelong disablement with severe damage to the brain or other vital parts of the body to injuries whose treatment takes only a few days and which have no longer term consequences.

<sup>7</sup> ETSC (2007), Social and Economic consequences of Road Traffic Injury in Europe.

<sup>8</sup> PIN Panellists for Italy estimated from sample studies made at the regional level that serious injuries represented around 35% of the total recorded injuries.

<sup>9</sup> ETSC Road Safety Performance Index (PIN) Programme covers all the 27 Member States of the EU, as well as Israel, Norway and Switzerland.

<sup>10</sup> The definition may include also a quite wide list of injuries and the allocation of "serious" is made by the police officer at the scene. Errors in the categorisation cannot be excluded.

## 2.1 Comparison between countries

In the group of EU countries using a similar definition of serious injuries (see Indicator box), the number of seriously injured survivors registered in national statistics was **28%** fewer in 2008 than in 2001, compared to **33%** fewer for road deaths.

Fig. 7 shows that deaths and serious injuries decreased at broadly the same pace between 2001 and 2008, but the reduction in slight injuries was slower between 2003 and 2007.

In Fig. 8 the annual average percentage change in road deaths since 2001 in 27 of the PIN countries is plotted vertically against the annual average percentage change in serious injuries (estimated in each case from data for all of the eight years) plotted horizontally. The EU averages of the two indicators are used to divide the diagram into four quadrants.

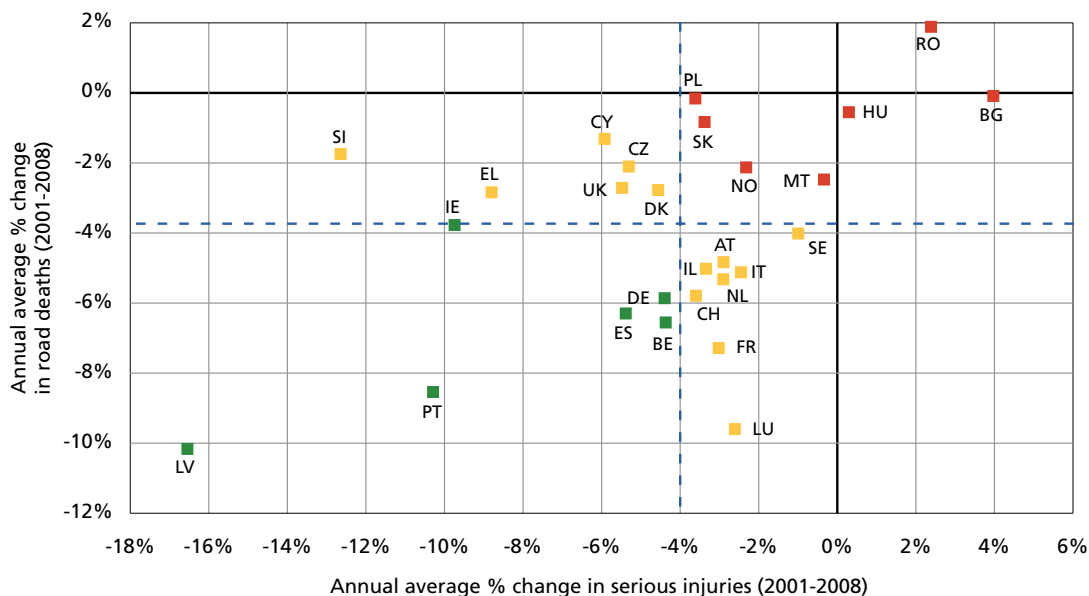


Fig. 8 Annual average percentage change in serious injuries plotted against the annual average percentage change in deaths over the period 2001 to 2008.

\* Latvia (2004-2008), France (2005-2008).

**Latvia, Portugal, Spain, Belgium, Germany, Switzerland and Ireland** achieved better than average reductions in both the numbers of seriously injured and killed people since 2001. **Slovenia, Greece, Cyprus, the UK, the Czech Republic, Denmark, and Poland** have also made above-average progress in reducing serious injuries but the reductions in people killed were not sufficient to bring them into the favourable lower left quadrant.

**Luxembourg, France, the Netherlands, Israel and Austria** made above-average progress in reducing the number of people killed but lower-than-average reduction in serious injuries. **Malta, Norway and Slovakia** made lower-than-average reductions in both serious injuries and deaths. **Hungary and Bulgaria** have been slightly reducing deaths but not injuries, and **Romania** has reduced neither.

In the group of 16 EU countries using similar definitions of serious injuries, annual average reductions in the number of serious injuries and in the number of deaths have continued at almost the same pace since 2001 when estimated using data for all 8 years: **4.7%** annually for serious injuries and **4.9%** for road deaths.

However the situation differs considerably from country to country. Fig. 9 shows the amounts by which the annual average percentage reduction in serious injuries exceeds the reduction in road deaths (countries with yellow bars), and, equivalently, minus the amount by which the annual average percentage reduction in deaths exceeds the reduction in serious injuries (countries with brown bars). In some countries - **Romania, Norway, Hungary and Spain** - changes in road deaths and serious injuries followed at almost the same pace. But in others - **Luxembourg, France, Bulgaria or Sweden**- reductions in road deaths exceeded by far the reductions in serious injuries, whereas in **Slovenia, Latvia, Ireland or Greece**, the reverse was the case.

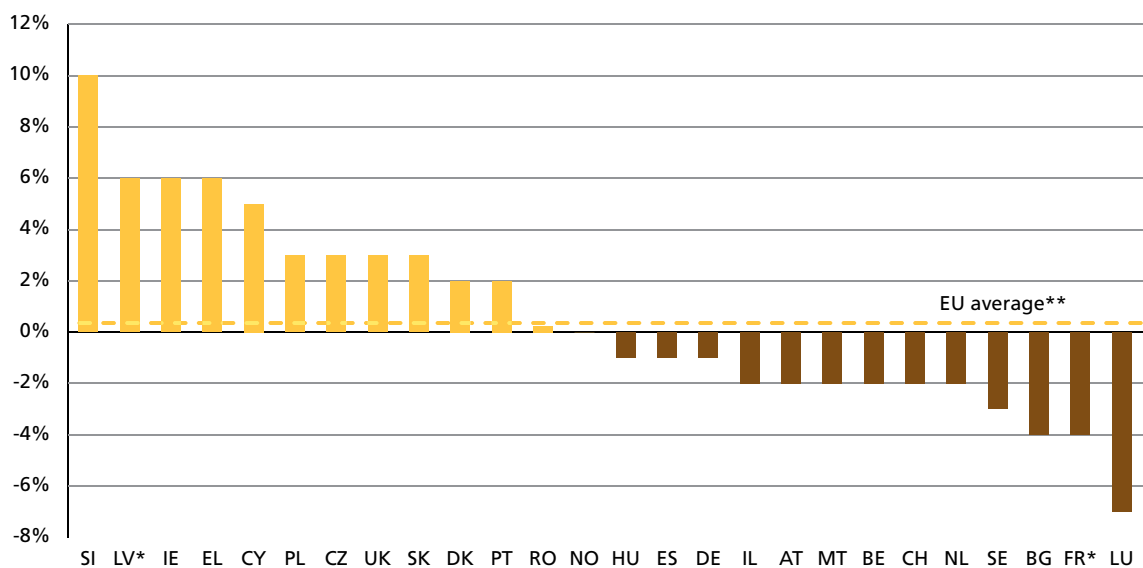


Fig. 9: Amount by which the annual average percentage reduction in serious injuries (2001-2008) exceeds the average annual percentage reduction in road deaths (2001-2008) or vice versa.

\* Latvia (2004-2008), France (2005-2008).

\*\* EU average (EU27 excluding Estonia, Finland, France, Italy, Latvia and Lithuania).

It is difficult to explain such differences between countries. Several factors could play a role. The rates of reduction could be influenced by changes in the level of underreporting of serious injuries during the period concerned or changes in in-patient admission criteria. Improvement in the reporting system of serious injuries will be reflected in the statistics by an increase in the number of serious injuries. Other factors can play a role too such as the mix of different types of collisions.

Some road safety measures might be more successful in reducing road deaths than in reducing serious injuries and vice-versa. Changes in the quality of emergency services, travel patterns (e.g. more cycling or walking) and behaviour influence the outcome of collisions.

*“Reduced driving speed has been shown to be the single most important factor of our recent road safety improvements. Nilsson has shown that on average a 1% reduction in the mean speed leads to a 4% reduction in fatal collisions, but a 3% reduction in severe injury crashes. It is therefore logical that we were more successful in reducing road deaths than in reducing serious injuries”.*

Jean Chapelon, road safety expert, France.

*“In the Netherlands, 45% of all seriously injured are injured while cycling with no motor vehicle involved. Traditionally, many road safety measures are targeted at car occupants and at interactions between motor vehicles and pedestrians or cyclists. The new Dutch Road Safety Plan sets a series of priority actions for 2020, in particular extra protection for vulnerable road users, such as cyclists”.*<sup>11</sup>

Peter Mak, Ministry of Transport, the Netherlands.

### 2.1.1 Underreporting of serious injuries

The actual number of people injured in road collisions is not known, but sample studies have shown it to be considerably higher than the official recorded number based on police reports. For serious injuries it can be estimated by comparing the number of injured road users treated in hospitals to the number recorded by the police. This was done within the SafetyNet project for eight countries participating and results were published in a Report *“Estimating the real number of road accident casualties”*<sup>12</sup>. In general, the lower the injury severity, the higher the underreporting in accident statistics tends to be. The level of reporting tends also to be lower for pedestrians, cyclists and motorcyclists than for car occupants. This is because in particular with collisions with no motor vehicle involved, or between one motor vehicle and a pedestrian or cyclist and no victims killed on the spot, victims, the involved driver or eyewitnesses call the emergency services but not necessarily the police.

The level of reporting also varies greatly among countries. These differences result from differences in legislation, insurance policy, police resources and quality of data collection and processing. In some countries, reporting is better because the police has to attend all collisions with personal injury, (e.g. Germany) or because insurance compensation can only be claimed if there is a report by the police.

While only less than 2 seriously injured people are registered for every death on the roads in **Greece** or **Latvia**, 12 are registered in the **Netherlands**, 15 in **Germany** and up to 23 in **Sweden**. The differences in serious injury per death rate does not mean that fewer people are injured for every road death in Greece or Latvia than in the Netherlands, Germany or Sweden but that seriously injured survivors are better reported in the latter countries. The Swedish example gives an illustration about the existing gap between police records and hospital records. There are no more than 9 seriously injured people registered by the police for every death (compared to 23 recorded by hospitals). Using police data only would bring Sweden close to the EU average.

<sup>11</sup> Dutch Road Safety Strategic Plan 2008-2020, p. 75-76

[http://www.verkeerenwaterstaat.nl/english/topics/road\\_traffic\\_safety/](http://www.verkeerenwaterstaat.nl/english/topics/road_traffic_safety/).

<sup>12</sup> Broughton et.al. (2008), “Estimating the real number of road accident casualties”, deliverable D.1.15, SafetyNet. <http://erso.swov.nl/safetynet/content/safetynet.htm>. Countries participating: the Czech Republic, France, Greece, Hungary, the Netherlands, Spain and the UK.

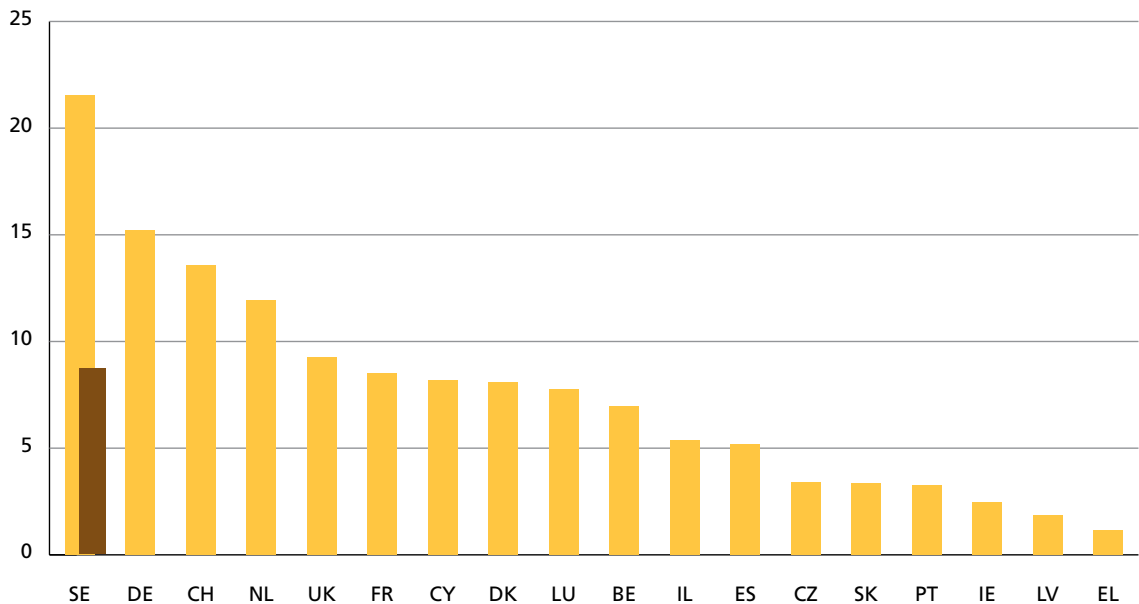


Fig. 10: Number of seriously injured recorded in national statistics per road deaths. (average of the years 2006-2008), for countries using similar definitions of serious injuries only.

*In the case of Sweden, the number of seriously injured recorded by the police only (brown bar) is shown for comparison with the number of seriously injured recorded by hospitals data (yellow bar). Recent analysis mentioned on p. 34 indicates a similar order of magnitude of difference for Great Britain. In the Netherlands, the difference between hospital and police records of serious injuries in road traffic is estimated as a factor of about 2.*

Comparison of the positions of countries in Fig. 10 with their positions in Fig. 9 shows quite a strong tendency for countries recording more injuries per death to be reducing recorded injuries more slowly than deaths, and those recording fewer injuries per death to be reducing the recorded injuries faster than the deaths.

In the SafetyNet report *"Estimating the real number of road accident casualties"*, conversion factors for underreporting were estimated for eight EU countries. It was originally envisaged that the conversion factors would be generalised to other EU countries to allow for European comparison. The authors came to the conclusion however that conversion factors differed too widely among countries and that comparable studies should be conducted in as many countries as possible.

### 2.1.2 Towards a common definition of serious injuries?

Already 16 EU countries use similar definitions of severe injuries, spending at *least one night in hospital as in-patient* or a close variant of this.

*"As in many other EU countries, we are also using the 24h definition in Belgium. But, in practice, it is still the police who have to define on the spot the severity, a task for which police officers have not been trained. The problem is that often professionals in emergency services are already working under extreme time pressure and claim to not have the capacity to inform the police".*

Yvan Casteel, IBSR, Belgium.



*“In Sweden we have the information about in-patients treated in hospital following a collision easily available from the hospital discharge database. The information coming from hospitals are matched with the police records using date of the accident as well as the casualty’s ID number. We consider it crucial to use hospital records to have a picture as close as possible to the actual number of serious injuries. Because this will in turn determine the resources we allocate to road safety and the measures to be prioritised”.*  
Asa Ersson, Swedish Transport Administration.

The SafetyNet<sup>13</sup> report mentioned above considered a definition based on either the length of stay in hospital or injury severity. Length of stay is easy to measure, but it is influenced by clinical practices and the availability and organisation of hospital services which differ from country to country. Results based on injury severity as measured by the Maximum Abbreviated Injury Scale (MAIS)<sup>14</sup> are more likely to monitor casualty and severity trends reliably but imply adequate staff training.

*“In The Netherlands, we noticed that more than before people are kept for observation as a preventive measure without having sustained any injury. It was therefore decided to change our definition of serious injury as “an in-patient, with injury level MAIS=2 or more”.*  
Henk Stipdonk, SWOV, the Netherlands.

### 2.1.3 The importance of linking police and hospital records

In addition to the obvious advantages of having a more complete picture of road accidents, a data system linking police and hospital records could provide numerous other opportunities. It would provide an opportunity to improve cooperation with medical and public health community stakeholders. At national level and even more at local level, counts of different types of injury are also used as additional indicators of road safety outcomes as the numbers of people killed fluctuate too much to provide a basis for assessing road safety policies.

At the national level, the impact of countermeasures such as the effectiveness of seat belt laws could be evaluated more comprehensively. At the EU level, a linked database would provide the basis for standards and directives and for setting injury reduction targets across the European Union.

**Sweden** has been routinely linking police and hospital records since 2003 and the creation of STRADA, the Swedish Traffic Accident Data Acquisition system. Implemented by the Swedish Transport Administration, this was developed in cooperation with the Police, the Federation of Swedish County Councils, the National Board of Health and Welfare, the Swedish Association of Local Authorities, the Swedish Institute for Transport and Communications Analysis and the National Statistic Office. This coordinated national registration of traffic accidents and injuries is now run by both the police and the health care authorities. The information provided by the police covers the whole of Sweden. It is complemented by information coming from more than 70% of all hospitals with emergency units. The police and the hospitals use two different questionnaires. The data collected by the police include information about when, how and where the accident took place and the traffic environment. Questionnaires used in hospital also provide information about the diagnosis and the treatment the victims received.

<sup>13</sup> Broughton et.al. (2008), “Estimating the real number of road accident casualties”, deliverable D.1.15, SafetyNet.

<sup>14</sup> The Abbreviated Injury Scale (AIS) is a specialised trauma classification of injuries, ranging from 1 (minor injuries) to 6 (fatal injuries). As one person can have more than one injury, the Maximum Abbreviated Injury Score (MAIS) is the maximum AIS of all injury diagnoses for a person.

#### IRTAD workshop on linking hospital and police data

At the invitation of the UK Department for Transport, IRTAD the International Traffic Safety Data and Analysis Group organised a Workshop on Linking Hospital and Police Data on the 30<sup>th</sup> of November and 1<sup>st</sup> of December 2009, in London. A report will be prepared by the IRTAD group in 2010.

More information: <http://internationaltransportforum.org/irtad/index.html> or [Veronique.FEYPELL@oecd.org](mailto:Veronique.FEYPELL@oecd.org).

### 2.1.4 Killed and seriously injured per million population: another indicator in the future?

Road mortality - road deaths per million population - is commonly used to benchmark the level of road safety between countries. As said before, this is however only part of the picture. Fig. 11 is an attempt to give a larger picture of the impact of road collisions by adding together the numbers of recorded deaths and serious injuries per million population. The reader should bear in mind that this is not yet a mature indicator due to large differences in definition and reporting practices for seriously injured road users.

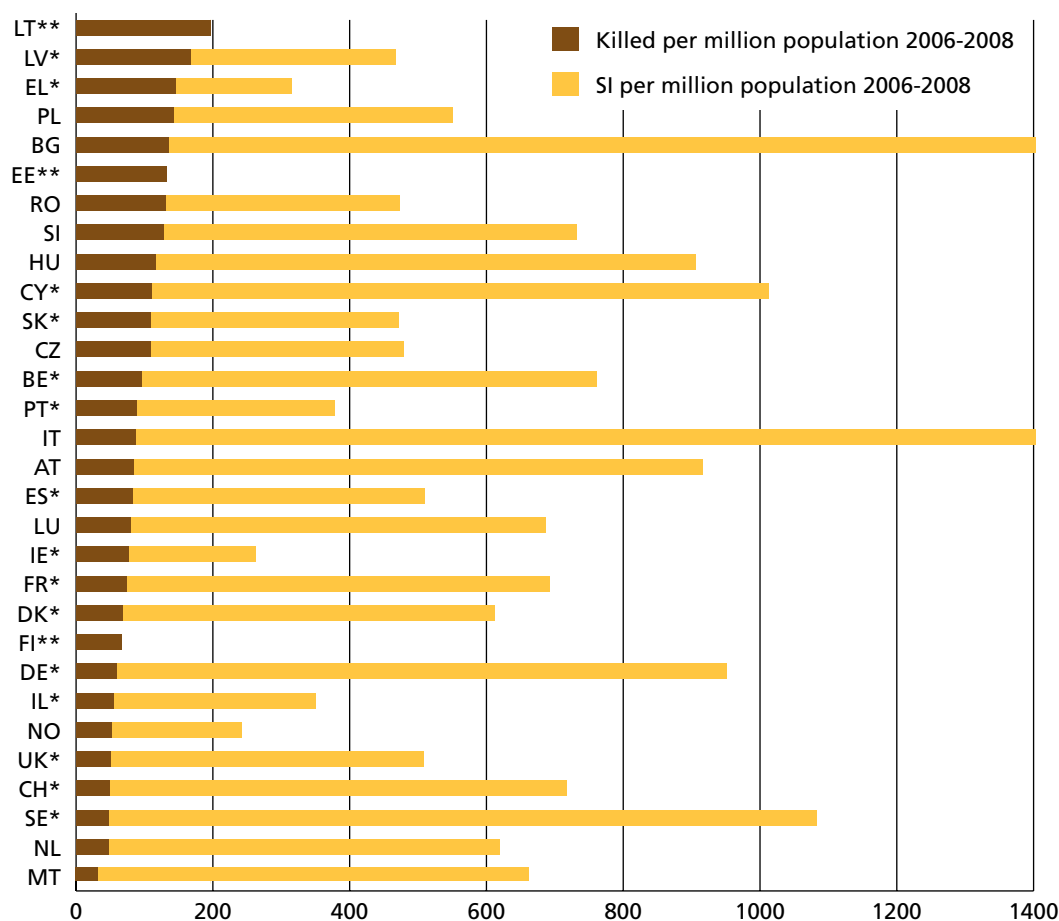


Fig. 11: Killed and seriously injured per million population (average for the years 2006-2008)

\* Countries using a comparable definition of one day in hospital for serious injuries. Police data except Sweden (hospital data)

\*\* Estonia, Finland, Italy and Lithuania do not collect number of serious injuries, only total injuries. Our PIN Panellists for Italy estimated that the number of serious injuries represented about 35% of total injuries and that estimate is used in the Figure.

But as reporting procedures move toward harmonisation in the EU, Killed and Seriously Injured (KSI) per million population may well in the future become another indicator for comparison between countries. How soon this is achieved will depend on the time it takes to agree on a practicable harmonised definition and recording standards, and to equip and train police forces, hospital staff and data-handling organisations in the Member States to implement them.

Sweden has found a way of bringing together data gathered by the police and many of the relevant hospitals, and other countries may well be able to benefit from the experience in Sweden, but each country would need to work out a good way for its own busy police officers and busy hospital staff to deliver the agreed standard of recording. Harmonised standards of recording do not imply identical recording procedures.

## 2.2 Background

### 2.2.1 Road safety as a public health issue

Road casualties are not often recognised as a public health problem. Improving road safety allows resources to be saved by reducing hospital admissions, the severity of injuries, rehabilitation needs and demands on emergency services. Improving safety for cyclists and pedestrians would also help to create conditions that can facilitate the choice of healthier lifestyles, thereby contributing to reducing risks for many non-communicable diseases. All these are gains to be made in public health. The WHO and ETSC in its contribution to the 4<sup>th</sup> RSAP have proposed that the health professionals embrace a more pro-active role in preventing road traffic crashes. Professionals involved in trauma care and rehabilitation can use the emotional impact and moral authority derived from witnessing the human tragedy behind road traffic injuries as a means of promoting effective public health measures<sup>15</sup>.

In a number of countries medical and public health professionals have been particularly instrumental in convincing decision makers about the merits of seat belts, child restraints and helmets, as well as lowering the BAC limit or driving speeds. Medical organisations have been helpful in educating the public about the benefits of these safety measures in particular supporting anti-drink driving and anti-speeding legislation. Cross-sectoral collaboration is essential for the introduction of science based countermeasures, and this is something the public health sector is in a good position to promote.

### 2.2.2 Setting national targets to reduce serious injuries

Several EU Member States -among them Austria, Denmark, Latvia, the Netherlands, Spain, Sweden and the UK- have adopted targets for reducing serious injuries.

**Great Britain** has had an injury reduction target since 1987. In 2000, new targets were set to reduce by 2010:

- the annual number killed or seriously injured by 40%;
  - the annual number of children killed or seriously injured by 50%; and
  - the number slightly injured per unit of vehicle-distance travelled by 10%;
- compared with the average for the years 1994-1998.

According to the official data recorded by the police, all casualty reduction targets were already achieved in 2008 with a 40% reduction in killed and serious injuries, a 59% reduction in respect of the child target and a 36% lower rate for slight injury.

<sup>15</sup> WHO Regional Office for Europe (2004), Preventing road traffic injury: a public health perspective for Europe.

*“Some work has started to reconcile police and hospital data. Lining up more closely police and hospital data is the challenge that we need to address to have more accurate data analysis.”*

Robert Gifford, PACTS, UK.

However the UK picture differs greatly with respect to the data source considered. From the analysis of hospital data and surveys of injury experienced in households sampled in the ongoing national household travel survey it emerges that there may well have been around 80,000 serious injuries in road traffic in 2008 whereas the police only recorded around 26,000<sup>16</sup>.

In May 2009 the **Swedish** Parliament set itself the objective to halve the number of deaths between 2007 and 2020, as well as to cut the number of serious injuries leading to long term impairment by 25%.

It may take some time between the accident and the diagnosis of long-term impairment. It is however possible to assess the probability that a particular type of injury reported at the hospital leads to long term impairment. The insurance company Folksam estimated it according to the body region injured based on the Abbreviated Injury Scale. Folksam’s method is likely to have low “predictive value” at the individual level but can be used on a large enough group to estimate how many people in the group might suffer long term disabilities.

Every year between 20,000 and 30,000 new injured road users are registered in the STRADA database and assigned an AIS value. According to the Folksam estimation, around 3,700 registered in STRADA in 2008 might sustain long term disabilities. 47 out of the 66 emergency hospitals in Sweden are

affiliated with STRADA, covering approximately 70% of the Swedish population. It can therefore be estimated that the total number of serious injuries leading to long term impairment was around 5,300 in 2008.

*“A new Road Safety Strategy 2008-2015 has just been adopted in Portugal. If there is a target of no more than 62 deaths per million inhabitants by 2015 (a 32% reduction from 2006 figures), there is however no injury reduction target.*

*This is in contrast with the previous Road Prevention Plan, which included explicit targets for serious injury reduction”.*

João Cardoso, LNEC, Portugal.

**Denmark** has had an injury reduction target since 1989. The new objectives for 2012 are to reduce by 40% the number of people killed, seriously injured and slightly injured taken separately. If the targets are achieved, there should be no more than 200 people killed, 1,850 seriously injured and 2,100 slightly injured in 2012 on Danish roads.

### 2.2.3 Improve post-crash care

Research shows that at least 50% of deaths from road traffic crashes occur within minutes, either at the scene or while in transit to hospital. Of the remainder, most die within 24 hours despite medical care. Therefore both the response time of emergency services and the quality of the care play important roles in survivability of accidents.

As important as pre-hospital care, good longer-term hospital and post-hospital care and rehabilitation are essential to mitigate the injury sustained and improve the quality of life of severely injured survivors.

<sup>16</sup> DfT (2009). Reported Road Casualties Great Britain: 2008. Annual Report.

## The European Commission is urging Member States to implement eCall

In case of a severe crash, an eCall-equipped car will automatically call the 112, Europe's common emergency number. Even if no passenger is able to speak, e.g. due to injuries, a minimum set of data is sent automatically, which includes the exact location of the crash site. The eCall can also be activated manually. A full implementation of eCall is estimated to cut response time across Europe thus increasing the proportion of those with potentially fatal injuries who survive, as well as mitigating the severity of other injuries.

eCall enjoys widespread support from all stakeholders and the general public. However, progress has been slow. The Commission had called for eCall to be rolled out voluntarily across Europe by 2009 but the system has been delayed due to a lack of support from some EU countries. In May 2010, five new Member States signed the Memorandum of Understanding, bringing the number up to 20 Member States endorsing eCall. Bulgaria, France, Hungary, Ireland, Latvia, Poland and the UK have not yet signed. A recommendation to enable eCall to be picked up by mobile phone operators in all Member States should be adopted in 2011. eCall also has to be included in the EU's type approval regulatory framework. eCall is also included as a priority measures in the EU ITS Action Programme and Directive proposal. The Directive is currently being negotiated between the EU Transport Council and the European Parliament.

Communication from the Commission 'eCall: time for Deployment'

[http://ec.europa.eu/information\\_society/activities/esafety/ecall/index\\_en.htm](http://ec.europa.eu/information_society/activities/esafety/ecall/index_en.htm)

ITS Action Plan and Proposal for a Directive

[http://europa.eu/legislation\\_summaries/transport/intelligent\\_transport\\_navigation\\_by\\_satellite/tr0010\\_en.htm](http://europa.eu/legislation_summaries/transport/intelligent_transport_navigation_by_satellite/tr0010_en.htm)

### 2.2.4 Long-term impacts of traffic injuries

Accidents happen in a fraction of a second but their consequences may last for days, months, years or the rest of life. In addition to reduced quality of life, road accidents carry many other consequences for the survivors such as job losses or job limitations, home and vehicle adaptations, as well as psychological consequences.

#### Did you know?

According to the International Brain Injury Association, road crashes account for 50% of all traumatic brain injury and are the leading cause of this type of injury among persons under 65.

More than 50% of spinal cord injuries are due to a road crash, says the International Campaign for Cures and Spinal Cord Injury Paralysis (ICCP)<sup>17</sup>.

<sup>17</sup> ETSC (2007), Social and Economic Consequences of Road Traffic Injury in Europe.

Injuries that shortly after the accident are considered to be slight or minor can have huge impact on the individual's future health. Whiplash associated disorders (WAD) is a typical example. WAD gets the lowest score in the Abbreviated Injury Scale (AIS 1), but it is by far the single most expensive condition from the insurance companies' perspective in most of the EU countries. Some of the patients seeking compensation for WAD did not consider the condition to be serious enough to warrant medical examination immediately after the injury. The pain and discomfort associated with the injury only became apparent later.

The same applies to psychological consequences of road collisions. A proportion of people involved in road collisions develop psychological symptoms, particular post-traumatic stress disorder. The incidence does not seem to be correlated with the severity of injuries, but rather with the perceived subjective threat to life<sup>18</sup>.

The burden of crashes is borne not only by those directly involved in road crashes but also by their families. A large proportion of relatives of dead and disabled victims, suffer psychological disorders, including anxiety attacks and suicidal feelings. One of the recommendations of the European Federation of Road Traffic Victims (FEVR) is the creation of free assistance centres for victims, where they would receive assistance and advice.

### 2.2.5 Ongoing European Cooperation in injury data collection

#### EuroSafe – European Association for Injury Prevention and Safety Promotion

EuroSafe acts as a catalyst in filling the gaps in current policies and programmes, and in creating synergies between the distinct sectors, disciplines and stakeholders involved in injury prevention and safety promotion. EuroSafe has established dedicated knowledge networks for key priority areas in injury prevention, such as the *Injury Data Network (IDN)* and the *European Child Safety Alliance (ECSA)*.

More information: [www.eurosafe.eu.com](http://www.eurosafe.eu.com), [w.rogmans@eurosafe.eu.com](mailto:w.rogmans@eurosafe.eu.com)

#### The European Injury Database (IDB) – hospital based information for road safety

The European Injury Database (IDB) is an injury surveillance system that collects accident and injury data from selected emergency departments of Member State hospitals according to the WHO ICECI data standard<sup>19</sup>. The IDB online database is hosted by the European Commission, Health and Consumer Protection (DG SANCO). The focus of the IDB is on prevention. Therefore, it provides not only information about the type of injury but also about its circumstances. The scope of the IDB has recently expanded to cover all types of injury, including injuries from road collisions.

The IDB is expected to serve as a complementary data source to police records and CARE, in particular for an improved assessment of injury severity and a broader coverage of pedestrian and bicycle injuries on the roads which tend to be underreported in the police data.

More info: <https://webgate.ec.europa.eu/idb/> or [Rupert.Kisser@kfv.at](mailto:Rupert.Kisser@kfv.at)

<sup>18</sup> Ibidem.

<sup>19</sup> International Classification of External Causes of Injury (ICECI). <http://www.who.int/classifications/icd/adaptations/iceci/en/index.html>. The ICECI and the AIS are different ways of classifying injuries but it is possible to convert ICD codes into AIS. See SafetyNet report by Broughton et al.

## 2.3 Recommendations

### ***Adopt serious injury targets for 2020 as part of the EU 4th Road Safety Action Programme***

- Each Member State should adopt national reduction targets for seriously injured (using their current definition of what is a serious injury) alongside the reduction of deaths. ETSC proposes that each Member State aims for a 40% reduction of seriously injured by 2020<sup>20</sup>.
- The EU should work towards the adoption of an EU common definition of serious injuries to foster comparability.
- Member States and regional or local authorities should adopt targets for reducing excessive and inappropriate speed to reduce injury severity.

### ***Improve quality of injury data***

- Member States should improve the recording of serious injuries by making use of both police and hospital records.
- The EU should develop and encourage Member States to adopt a simple injury scale (SIS) suitable for use by the Police and other emergency services and linked to the globally-accepted Abbreviated Injury Scale (AIS).
- Member States should provide training to Police and other emergency services in the use of the SIS. This would make injury data based on police reports more comparable between countries.
- Final classification of injuries according to severity should be performed in an appropriate proportion of cases by medical professionals using the AIS and trained in its correct use.

### ***Involve health professionals more effectively in road safety issues***

#### *Health professionals should be involved:*

- In developing good practices and guidelines on essential trauma care and emergency services.
- In estimating the real social costs of road traffic injuries.
- To serve as opinion leaders to encourage decision makers to promote road safety legislation and to help educate the public.

### ***Improve post accident care***

#### *Member States should:*

- Include both pre- and post-hospital care in road safety strategies and make road injury a priority issue for the health sector.
- Provide the necessary support to make Emergency Telephone Number 112 and eCall operational as soon as practicable.
- Improve emergency response<sup>21</sup>.
- Improve long-term hospital care and rehabilitation of road crash survivors.

#### *The EU should:*

- Adopt the ITS Directive making eCall one of the priority measures.
- Propose regulatory measures to implement eCall across the EU and include it in vehicle type approval.

<sup>20</sup> In ETSC Blueprint for the EU's 4<sup>th</sup> Road Safety Action Programme, it was mentioned that Member States should aim for a reduction of 20% of serious injuries. Giving the new evidence that serious injuries decreased at almost the same pace as road deaths between 2001 and 2008, we felt that a 20% reduction target will not be challenging enough for 2010-2020. The reduction target for serious injuries should be the same than the reduction target for road deaths if we want to sustain progress in reducing serious injuries.

<sup>21</sup> ETSC (2008), Blueprint for the EU's 4<sup>th</sup> Road Safety Action Programme, Annex 2 Steps to improve emergency care and rescue systems.

### **Create a road safety system that recognises the vulnerability of the human body**

- curb illegal and inappropriate speed, which will reduce injury severity in all kinds of collisions.
- aim for a 100% use of seat belts in front and rear seats, helmets and child restraint systems.
- fight drink driving and drug driving.
- improve vehicle passive and active safety in particular protection against whiplash injury.
- make roads and roadsides more protective and forgiving.

## 2.4 Interviews

ETSC spoke with **Brigitte Chaudhry**, President of the European Federation of Road Traffic Victims (FEVR) and founder of the UK NGO RoadPeace. Brigitte was also instrumental with FEVR member organisations in setting up and observing since 1993 a Day of Remembrance for commemorating road victims. In 2005 this was adopted by the United Nations as World Day of Remembrance observed annually on the 3<sup>rd</sup> Sunday of November - last year on 15<sup>th</sup> November 2009 with the theme ***From global remembrance to global action!***

*Why is it important that all EU Member States aim for a reduction in seriously injured people alongside deaths?*

Seriously injured have so far been largely forgotten, yet serious injuries shatter lives and are also very costly to all of us. We believe that reductions in death rates may be partly due to more people surviving with very serious injuries, which is a further reason why they should be included in EU targets. It is shocking that our information on injuries is still so inadequate.

*What do you do for road traffic victims?*

FEVR represents the interests of the bereaved and injured. The NGOs under FEVR's umbrella are virtually alone in providing advocacy and support to the annually expected victims, who join the existing huge group of people already affected by road trauma, often forever. Why is it that there is no provision for the casualties who are being expected each year? FEVR and the victim organisations in various countries are trying to make clear to decision makers and other road safety NGOs that the post crash response (crash investigation, criminal and civil justice, longer-term care and rehabilitation) must be seen and treated as part of prevention.

*Why a World Day of Remembrance for Road Traffic Victims?*

I will answer with a quote from the World Day Guide, produced by WHO, FEVR and RoadPeace: “[...] *to offer solidarity and friendship to fellow victims, draw attention to the devastation caused by road danger and call for an end to the carnage*”.

The Day is observed every year throughout the world - with a great variety of events and ceremonies, ranging from religious services and vigils to concerts, conferences and exhibitions, no longer organised by victim NGOs alone, but increasingly also by organisations involved in road safety work and relevant government departments.

“*To offer solidarity and friendship to fellow victims, draw attention to the devastation caused by road danger and call for an end to the carnage*”.



*On 19-20 November 2009, the Government of the Russian Federation hosted the First Global Ministerial Conference on Road Safety. At this Conference you presented the "Appeal from National and International NGOs working for better road safety and road victims' rights". What are the main calls to Ministers for the Decade of Action?*

The key proposals are that governments change transport policy giving priority to safety and sustainable mobility, and that road safety policies include all post crash areas: immediate rescue interventions, thorough investigations, effective criminal and civil proceedings where appropriate and rehabilitation and support. The Summary of the NGO Declaration is being translated into all 6 UN languages by the WHO.



Brigitte is the founder and President of RoadPeace, the UK's charity for road traffic victims, which she set up after her son was killed by a red light offender in 1990. A teacher until then, she has since concentrated her efforts on researching and publicising the situation of road victims and the legal response to road death and injury, both in the UK and abroad.

She is the co-author of the report Impact of road death and injury, and was made an honorary MBE for her work in the UK in 2003.

Brigitte is also the current President of the European Federation of Road Traffic Victims (FEVR), an umbrella organization of over 20 national organisations. As FEVR has UN consultative status, Brigitte represents road victims at relevant UN and WHO working parties.

[www.roadpeace.org](http://www.roadpeace.org) and [www.fevr.org](http://www.fevr.org)

Website of the World Day of Remembrance:

<http://www.worlddayofremembrance.org/>

Website of the First Global Ministerial Conference on Road Safety:

[www.1300000.net](http://www.1300000.net)

Faces behind the figures. ETSC spoke to **Dr. Aine Carroll** from the Irish National Rehabilitation Hospital to try to understand what sort of people those seriously injured road crash survivors are.

*Who are the victims of road crashes that you treat daily in your hospital?*

Most of our patients with road traffic collision related injuries are young males with traumatic brain injuries, traumatic spinal cord injuries and traumatic limb amputations.

Traumatic injuries can have numerous sequelae both physical and psychological and can have a devastating impact on the person and the extended family. Individuals with moderate injuries stand a reasonable chance of being able to return to participate in society either independently or with assistance. Only approximately 10% will return to work. Those with severe injuries will remain dependent on others for all aspects of their day to day activities for the rest of their lives.

*How can national governments and the EU help you and your patients?*

It is essential that appropriate investment is made in injury prevention. There needs to be active participation in good quality data collection and Ireland has to participate in the EU Injury Database

“Only approximately 10% of our patients will return to work.”

and an injury surveillance register. A national injury prevention authority should be also set up in each Member States.

Education is paramount to any prevention strategy, especially for the most at risk groups.

It is essential that there is adequate provision of appropriate services across the spectrum of services from acute care and post acute hospital care and into the community. Access to Rehabilitation services as soon as possible following injury is a basic human right which is supported by the United Nations Charter through its standards (1993) and by the European Year for People with Disabilities, 2003. Such services should be available to all persons across the rehabilitation spectrum when required in a timely manner. Rehabilitation services have been chronically underfunded in Ireland for many

“*Access to rehabilitation services as soon as possible following injury is a basic human right.*” years and it is likely that very few persons with acquired brain injury gain access to the services they require.

*What can you and your colleagues do to raise awareness about the necessity to curb road carnage?*

Myself and my colleagues participate in a variety of educational activities and participate in local and National strategic development. As Rehabilitation Consultants we feel we are well placed to comment on the consequences of road traffic accidents and would see it as part of our role to be involved in public awareness campaigns. However, we are very few in number and indeed are at the bottom of the European league of numbers of Physical Medicine and Rehabilitation specialists. There needs to be significant expansion in our numbers to enable us to develop our remit from fire fighting to prevention, education and enablement.



Dr Áine Carroll is a Specialist in Rehabilitation Medicine at the National Rehabilitation Hospital (NRH) in Dublin, Saint Vincent's University Hospital and the Royal Hospital in Donnybrook. She is currently President of the Irish Association of Rehabilitation Medicine. She has published on a wide variety of rehabilitation issues.

## 31 Tackling the three main killers on the roads

Speeding, drink driving and failure to wear a seat belt are the three main risk factors on the road. New PIN Country Rankings by relating to these dangerous behaviours provide an update of the rankings published in the 1<sup>st</sup> PIN Annual Report in 2007. This update comes at a crucial time when the EU is discussing its priorities for the forthcoming EU Road Safety Action Programme for the next ten years. This autumn the European Commission is expected to publish a new proposal for a Directive on Cross Border Enforcement of road traffic law taking into account the entry into force of the Lisbon Treaty.

Measures to tackle these dangerous behaviours behind the wheel have been at the core of road safety policy for decades and significant progress has been made since 2001. Experience from fast progressing countries shows that progress in fighting speeding and drink driving and increasing seat belt use can be fast and save thousands of lives. The European Union has also passed stricter legislation making the use of seat belts mandatory throughout the EU. The European Commission also published two relevant Recommendations, the 2001 Recommendation on maximum permitted blood alcohol content of 0.2g/l for novice and professional drivers and 0.5g/l for other drivers, and the 2004 Recommendation on enforcement in the field of road safety.

Still, there is a huge potential in addressing these three longstanding areas of road safety. If average driving speeds dropped by only 1 km/h on all roads across the EU, more than **2,200** road deaths could be prevented each year, 1,100 of them on urban roads, 1,000 on rural roads and 100 on motorways. Even if the number of deaths in accidents in which a driver is over the alcohol limit were no greater than is recorded in the accident statistics, at least 3,500 deaths could have been prevented in 2009 if drivers concerned had not drunk before taking the wheel. If, as estimated by the EC, 25% of road deaths occur in such accidents, then at least **7,500** could have been so prevented. Across the EU, an estimated **12,400** occupants of light vehicles survived serious crashes in 2009 because they wore a seat belt. Another **2,500** deaths could have been prevented if 99% of occupants had been wearing a seat belt, a rate that could be reached with seat belt reminders.

The 4<sup>th</sup> European Road Safety Action Programme is now awaited with great expectation by all Member States and beyond Europe. It should provide a strong case for fighting speeding, drink driving and the failure to wear a seat belt. It should encourage all Member States – and provide support for those facing the greatest challenges – to monitor indicators of these behaviours. Member States should be prioritising road safety measures, including stricter laws, more stringent enforcement and educational campaigns, tackling the three main killers on the roads and should set themselves targets for desirable compliance levels.

## 3.1 Progress in curbing driving speeds

Excessive and inappropriate speed is the number one road safety problem<sup>22</sup>. Speeding is a primary factor in about one third of fatal accidents and an aggravating factor in all accidents<sup>23</sup>. Exceeding the speed limits is widespread. In countries where data are available, in free-flowing traffic up to 30% of drivers exceed speed limits on motorways, up to 70% on roads outside built-up areas and as many as 80% in urban areas. Addressing illegal speeding therefore requires a large number of non-compliers to change their behaviour. Experience shows that there is not one single measure to reduce speed. It rather takes a combination of measures including credible speed limits, enforcement and education, combined with 'self-explaining' roads and vehicles<sup>24</sup>.

### Never drink and drive? But like to push the accelerator pedal? This is for you!

Drivers are usually aware of the increased risk of being involved in a fatal collision after drinking but largely underestimate the increased risk of being involved in a fatal collision when speeding. Driving with 0.5 g/l BAC increases the risk of a fatal crash by a factor of 5, the same as driving about 50% faster. The increased risk of driving at 75km/h on a 50km/h road, 135km/h on a 90km/h road or 180km/h on a 120km/h motorway is therefore similar to the risk of driving with a 0.5g/l BAC.

Driving above the legal alcohol limit is considered in most European countries a criminal offence and can lead drivers to prison. Sanctions are far more lenient for speeding, although the risk of driving at high speeds is similar to the risk of drinking and driving<sup>25</sup>. Speeding should be socially unacceptable, as is the case now for drink-driving in most EU countries.

### 3.1.1 Comparison between countries

Among the countries monitoring speed, drivers, in particular car drivers, have slowed down. **France** is the only country where speed reductions have been achieved on all types of roads between 2001 and 2009. The average speed of light vehicles on all road types taken together has decreased steadily by 10 km/h (or 12%) over the last eight years. **Great Britain** and **Austria** also recorded reductions in mean speeds on both urban roads and motorways. Drivers have slowed down markedly in cities in the **Czech Republic** and **Ireland**.

Best progress has been made on **motorways**, where 'only' about 30% of drivers now exceed the speed limit, the highest average level of compliance among the three types of roads. Most of this progress followed the introduction of extensive automated speed enforcement schemes based on safety cameras in **France**, **Switzerland** and recently **Spain**, coupled with stricter sanctions like penalty point systems including speed offences and higher fines (**France**, **Spain**, **Latvia**, **Czech Republic**, etc.).

Progress has been mixed on **rural roads**. Average speeds have decreased in some countries, but increased in others. Also, within some countries, average speeds have decreased on some rural roads but increased on others. Compliance with speed limits is low in many countries. In 8 out of 11 countries monitoring speeds, the percentage of drivers exceeding the speed limit varies from 30% to 72%.

<sup>22</sup> Aarts, L. & van Schagen, I. (2006), Driving speed and the risk of road crashes: a review, Accident Analysis and Prevention, vol. 38, issue 2, p.215-224.

<sup>23</sup> OECD/ECMT (2006), Speed Management.

<sup>24</sup> Wegman, F. and Aarts, L. (2006), Advancing Sustainable Safety. National Road Safety Outlook for 2005-2020.

<sup>25</sup> OECD/ECMT (2006), Speed management.

Average speeds have decreased also on **urban roads** in several countries. But, in comparison with motorways and rural roads, the proportion of cars travelling above the limit is highest on urban roads, roads where limits have been set at the lowest level to protect the most vulnerable road users - pedestrians and cyclists.

These findings are in stark contrast with the drivers' self-reported behaviour. In a survey carried out in 2002-2003 in 23 countries, drivers in all countries reported committing most violations on motorways and least violations in built-up areas. The percentage of car drivers that reported violating the speed limit 'often', 'very often' and 'always' in European countries on different road types was 28% on motorways, 19% on main roads between towns, 13% on country roads and 7% in built-up areas (SARTRE 3, 2004)<sup>26</sup>.

## The indicator

The mean speed and level of compliance of vehicles in free-flowing traffic (i.e. the proportion of vehicles exceeding the posted limit) are the two most commonly used speed indicators in European countries. The two indicators have different potential interpretations. While the link between mean speed and accident frequency is well-documented by research, the relationship between levels of compliance and accident occurrence is less well-known. Levels of compliance are, on the other hand, more closely linked to road safety interventions, e.g. enforcement. They are a useful tool for policymakers to monitor the effect of their actions.

A SafetyNet manual on road safety performance indicators<sup>27</sup> details the methodologies for countries to collect data in a uniform manner across the EU. But data collection procedures still vary substantially. Countries observe speeds for different vehicle types (all traffic together, cars and vans only) and different criteria are used to identify measurement locations and appropriate (uncongested) traffic conditions. This is why it is difficult to make comparisons between countries of levels of speed and speed limit violations. Countries are therefore compared with respect to changes since 2001 in mean speeds and in percentage of vehicle exceeding the speed limit on three different road types: motorways, rural roads and urban roads.

More countries were able to provide data on driving speeds than in 2007. **Great Britain**<sup>28</sup>, **Austria**, **Finland** and **Switzerland** have a long tradition of monitoring speed in free-flowing traffic. **France** has been monitoring speed all year round since 2003 and publishes the results in its Observatory of Speeds<sup>29</sup>. **Belgium** also started monitoring speeds in 2003<sup>30</sup>. Some others have started more recently, such as **Estonia**, the **Czech Republic** and **Slovenia**, following SafetyNet recommendations. Others perform speed measurement occasionally, e.g. before and after major changes in legislation or in the speed limit. **Germany**, **Greece**, **Malta**, **Italy** and **Slovakia** do not currently monitor mean speeds which deprives them of important feedback on the effectiveness of their actions. In **Portugal**, measurements stopped in 2006. In **the Netherlands**, measurements are made only on motorways. **Sweden** has developed a *speed index* to monitor speed developments at 83 points on the rural road network between extensive speed surveys made every few years.

<sup>26</sup> Cauzard et al. (2004), European car drivers and road risk, Deliverable of the EU FP6 project SARTRE 3.

<sup>27</sup> Hakkert, S. and Giterlman V. (Eds.) (2007), Road Safety Performance Indicators: Manual. Deliverable D3.8 of the EU FP6 project SafetyNet.

<sup>28</sup> The UK Department for Transport publishes speed measurements for GB in an annual bulletin "Road Statistics: Traffic, Speeds and Congestion": <http://www.dft.gov.uk/pgr/statistics/datatablespublications/roadtraffic/speedscongestion/roadstatstsc/roadstats08tsc>.

<sup>29</sup> L'Observatoire des vitesses, l'ONISR (Observatoire National Interministériel de Sécurité Routière).

<sup>30</sup> IBSR (2009), Mesure nationale de comportement en matière de vitesse (2003-2007), Belgium Road Safety Institute, [http://bivvweb.ipower.be/Observ/FR/snelheid\\_fr\\_lowres.pdf](http://bivvweb.ipower.be/Observ/FR/snelheid_fr_lowres.pdf).

### 3.1.2 Some progress on motorways

In the past few years, mean speeds on motorways have decreased appreciably in **France, Spain and Austria** (Fig. 12a). In the other countries regularly monitoring speed, results have been mixed. In **Ireland**, the mean speed increased slightly by 1km/h between 2002 and 2008 but remains within the legal limit (Fig. 12b).

The most sustained reduction has been achieved in **France**, where cars and vans have slowed down by almost 10km/h on average (from 126km/h in 2001 to 117km/h in 2009) on 130km/h motorways. The percentage of vehicles exceeding the speed limits dropped from 50% in 2001 to 25% in 2009 on the 130km/h network and from 54% to 41% on the 110km/h network (Fig. 12c). In **Spain**, the measurements made since 2004 on 20% of the toll motorway network are showing encouraging signs of considerable progress. The mean speed which used to be 10km/h above the posted limit is now below the limit (Fig. 12b). The percentage of cars and vans exceeding the speed limit has been cut from 73% in 2004 to 35% in 2009 (Fig. 12c).

In **Lithuania**, the picture is one of contrasts. Mean speeds decreased on motorways limited to 100km/h but increased on those limited to 110km/h and 130km/h. Mean speeds decreased by 3km/h between 2005 and 2006 on the 100km/h sections following the installation of the first safety cameras. Mean

speeds increased on the stretches limited to 110 and 130km/h (by 10 and 6km/h respectively), where large parts of the road surfaces were improved. The years 2001-2008 were also marked by an economical boom in Lithuania, during which people bought new cars that are safer but are also capable of higher speeds.

*“We followed closely the increase in speed on the networks with the highest speed limits. Fortunately, accident rates did not increase”.*

Vidmantas Pumputis, Ministry of Transport, Lithuania.

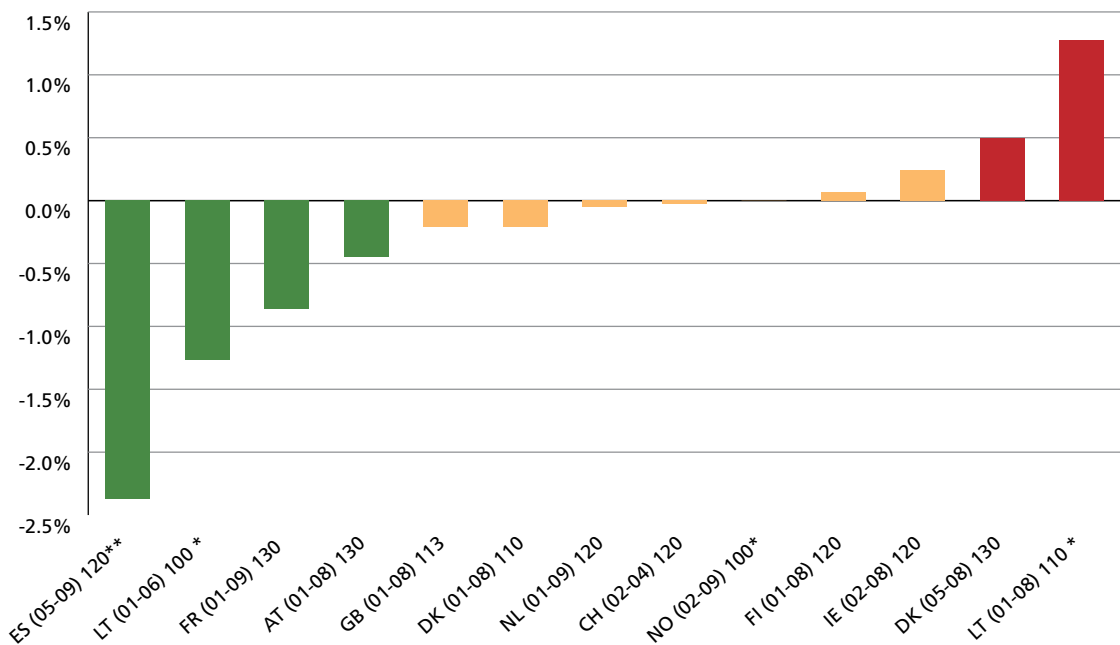


Fig. 12a: Yearly average percentage change in mean speed of cars and vans on motorways (from earliest available baseline to latest available year). \* All traffic

\*\* Spain: data is available for only 20% of the toll motorways length in Spain.

Netherlands: 2009 provisional.

Finland: the speed limit is 120 km/h during summer and 100km/h during winter.

In **Denmark**, speed limits were raised in 2004 from 110km/h to 130km/h on half of the motorway network after major infrastructure safety upgrades to reduce the problem of speed heterogeneity. Consequently, the mean speed increased slightly on the part of the network where the new limit of 130km/h was introduced. But the mean speed remains below 130 and only 30% of the drivers drive faster than the new speed limit. On the part of the network where the speed limit stayed at 110, the mean speed, which had been decreasing, has started to increase slightly since 2006 (Fig. 12b). The raising of the speed limit to 130km/h was accompanied with increased enforcement and awareness campaigns. But this level of enforcement could not be sustained. Therefore raising the speed limit to 130km/h seems to have had a small spill-over effect on the motorways where the speed limit was not changed and 70% of the drivers now drive faster than 110km/h (Fig. 12c).

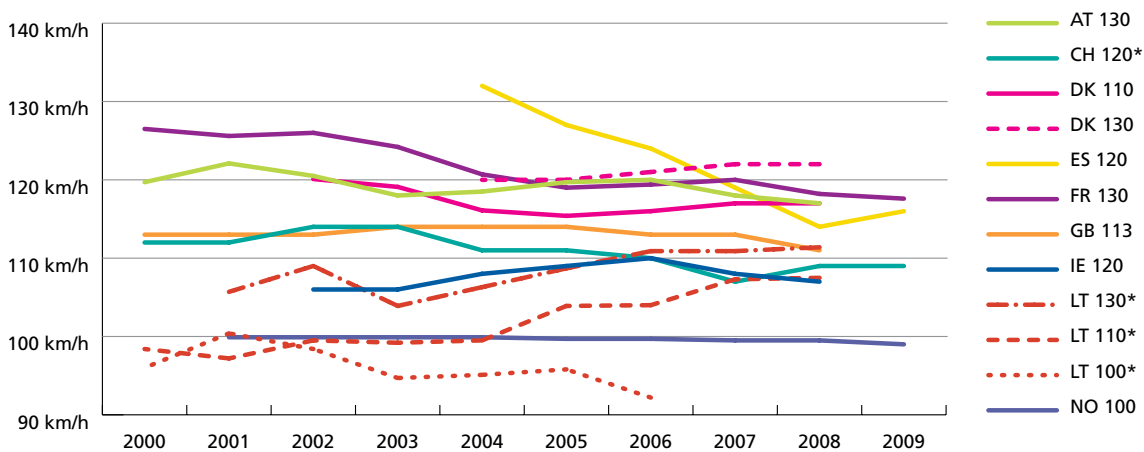


Fig. 12b: Mean speed of cars and vans on motorways for some EU countries (in km/h). \* All traffic.

In many countries compliance with speed limits is higher on motorways than on rural or urban roads. Still, in free-flowing traffic, up to 30% of the drivers exceed the speed limit on motorways in 2009 (Fig. 12c). The percentages of vehicles exceeding the speed limit are the lowest in **Ireland (15%)**, **Lithuania (17%)**, **Austria (19%)** and **Switzerland (24%)**. It is the highest in **Hungary, Spain and Great Britain**.

In the **Czech Republic**, the percentage of vehicles exceeding the 130km/h speed limit tripled between 2004 and 2006. Plans from some Czech MPs and discussion in the media to raise the speed limit to 160km/h on some stretches of motorway might have encouraged more drivers to break the law.

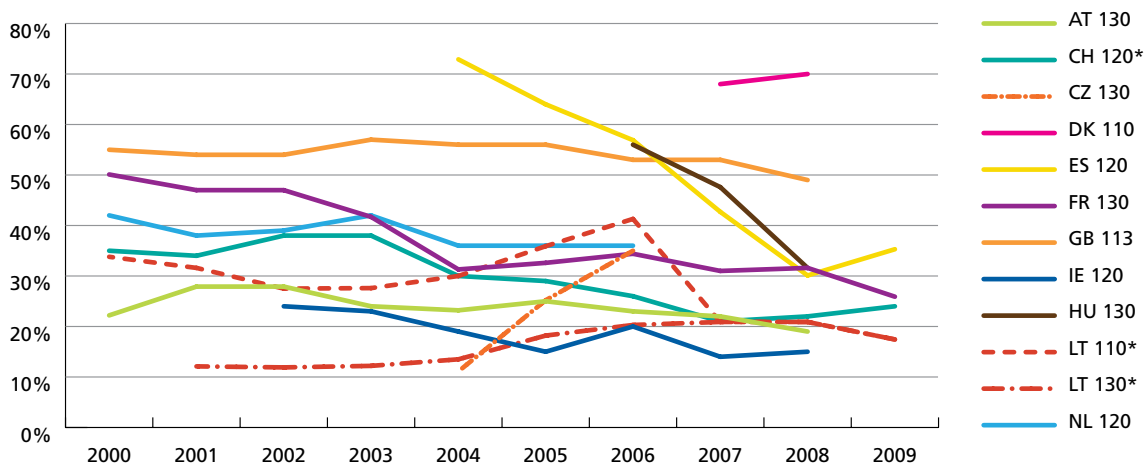


Fig. 12c: Percentage of cars and vans exceeding the speed limits on motorways. \* All traffic.

### 3.1.3 Noticeable progress on rural roads

Mean speeds on rural roads have decreased in **France, Belgium, Ireland, the Czech Republic, Latvia and Austria** (Fig. 13a). Best reductions were witnessed in **France**, where cars and vans slowed down by more than 10km/h from 93 to 82 on 90km/h roads. Most of the reduction took place between 2003 and 2007, as a result of the introduction of a fully automated safety camera system as part of a new strategy to “end drivers’ impunity”<sup>31</sup> (Fig. 13b).

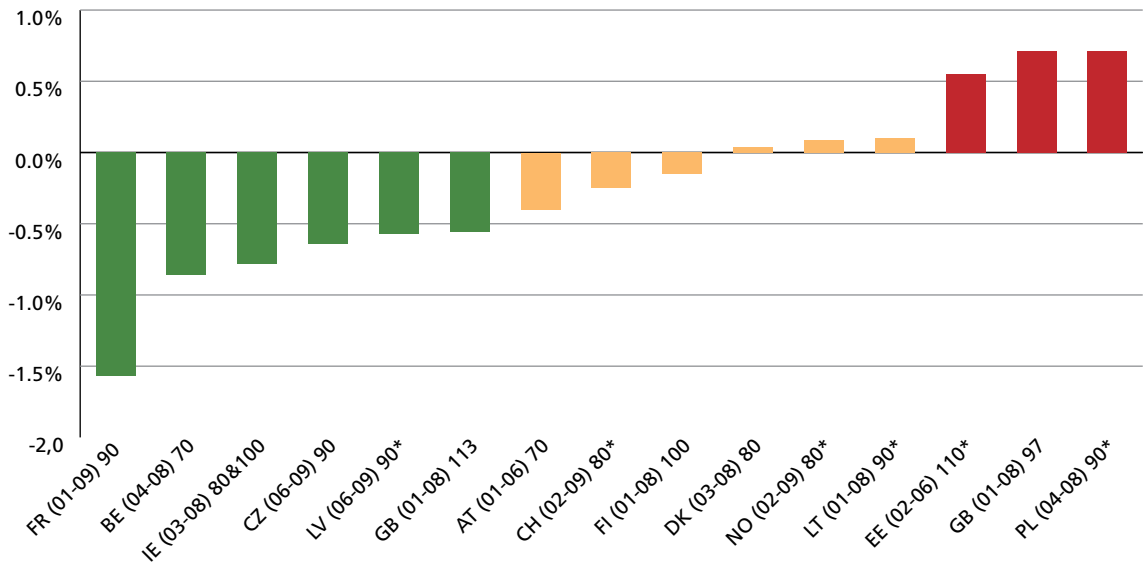


Fig. 13a: Yearly average percentage change in mean speed of cars and vans on rural roads (from earliest available baseline to latest available year). \* All traffic.

GB 113 km/h = 70 miles/h. GB 97 km/h = 60 miles/h

In **Great Britain**, the mean speed on 70miles/h has dropped slightly while there has been a small increase on 60miles/h roads, but the average speeds on these roads remain well within the limit. Mean speeds have increased by 2km/h on 90km/h rural roads in **Poland** and **Estonia** (Figs 2a & 2b). In these two countries, mean speeds are above the legal limit.

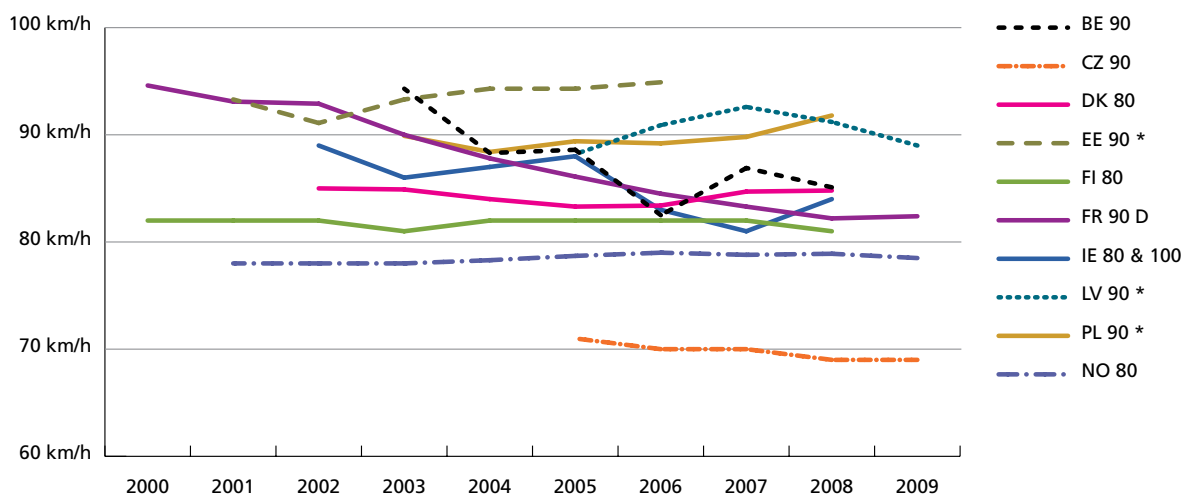


Fig. 13b: Mean speed of cars and vans on rural roads in some EU countries since 2000. \* All traffic.

<sup>31</sup> ETSC (2007), 1<sup>st</sup> PIN Report, Raising compliance with Road Safety Laws, p. 36.



In the **Czech Republic, Austria, France and Switzerland**, the percentage of drivers of cars and vans<sup>32</sup> exceeding the speed limit on rural roads is the lowest, lower than 30% (Fig. 13c). The percentage of drivers driving faster than the speed limit is the highest in **Denmark and Poland** and it has increased since 2007 reaching more than 70% of drivers breaking the posted limit.

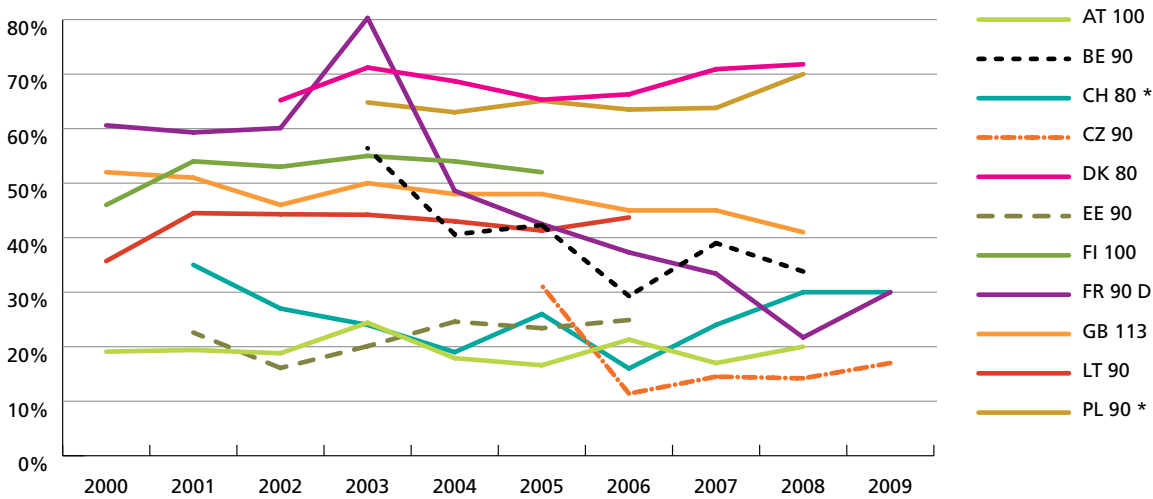


Fig. 13c: Percentages of cars and vans exceeding speed limits on rural roads. \* All traffic.

### 3.1.4 Good progress on urban roads

Best progress has been made in the **Czech Republic**, where average speeds on urban roads decreased by 10km/h in the last five years (from 51km/h to 41km/h or 4% per year) (Fig. 14a): 80% of drivers now obey the speed limit (Fig. 14c). In **Ireland** also, drivers slowed down markedly in cities. Mean speeds on urban roads taken together decreased by 13 km/h between 2002 and 2008 (almost 3% on average each year) (Fig. 14a). But the mean speed is still 54km/h with 53% of vehicles exceeding the limit (Fig. 14b). In residential areas, the mean speed is now 35km/h with only 4% of vehicles exceeding 50km/h, suggesting that there is scope to follow many other European cities by reducing the speed limit to 30km/h.

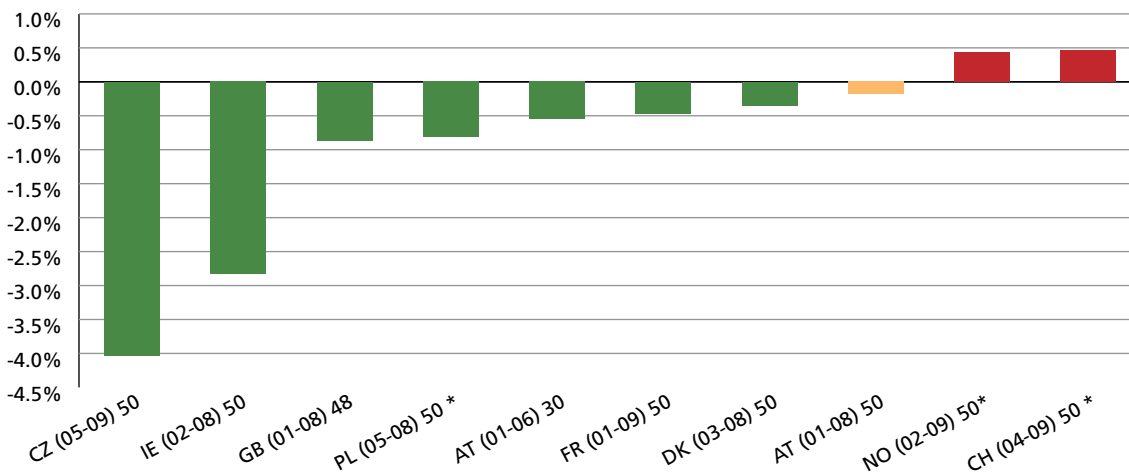


Fig. 14a: Yearly average percentage change in mean speed of cars and vans on urban roads (from earliest available baseline to latest available year)

In Poland, in 2004, the speed limit in urban areas was lowered from 60km/h to 50km/h between 6am and 11pm (it remains 60km/h from 11pm to 5am). \* All traffic.

<sup>32</sup> All traffic for Switzerland.

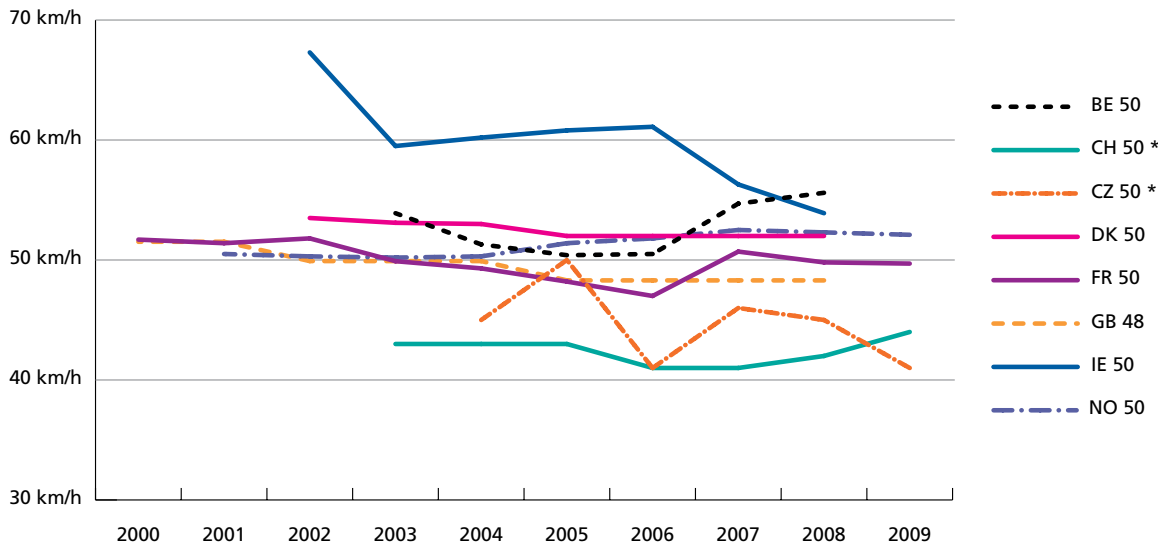


Fig. 14b: Mean speed of cars and vans on urban roads in some EU countries since 2000. \* All traffic.

After decreases in 2004 and 2005, mean speeds increased in **Belgium** in 2007 and 2008 to reach 55km/h on 50km/h roads in 2008. Mean speed increased by one km/h in **Switzerland** between 2003 and 2008, but remains below the 50km/h limit.

The proportion of cars travelling above the limit is highest in Poland at **80%** (Fig. 14c). In **Austria**, 70% of vehicles exceed 30km/h in residential zones and 51% exceeded the limit on roads limited to 50km/h. By 2009 the **Czech Republic** and **Switzerland** recorded the lowest level of drivers travelling faster than 50km/h.

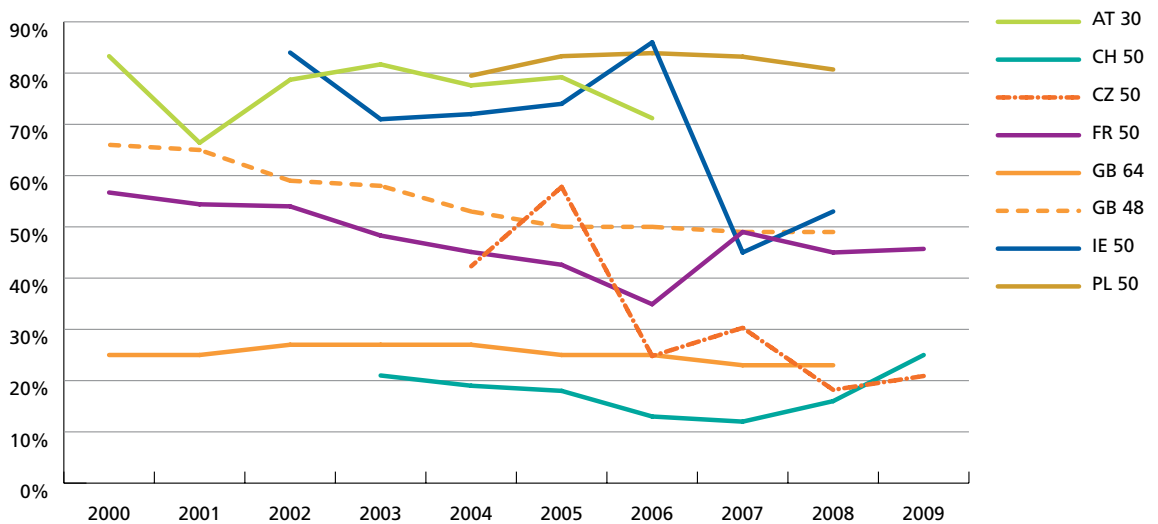


Fig. 14c: Percentage of cars and vans exceeding the speed limits on urban roads. \* All traffic.

### **Other speed-related indicators**

**Switzerland** uses a detailed indicator system to monitor developments in the fields of speed and drink driving. Indicators include the levels of speed-related injury collisions, police checks, violation rates and sanctions as well as the opinion of drivers.<sup>33</sup>

#### **The Swedish “speed index”**

*“We used to do extensive speed surveys between 1996 and 2004 with more than 1,600 measurements per year. We will resume those extensive speed surveys in 2011 and two more will be done by 2020. Since 2004, however, we did not stop monitoring speed developments but we used a lighter system called “speed index” that allowed us to monitor speed developments at 83 points on our rural road network. We are happy to see that after being stable for some years, average speeds started to decrease since 2006.”*

Åsa Ersson, Swedish Transport Administration.

### **3.1.5 Effective speed management will lead to fast progress in reducing road deaths**

Effective speed enforcement leads to a rapid reduction in deaths and injuries. Sustained intensive enforcement that is well explained and publicised also has a long-lasting effect on driver behaviour<sup>34</sup>. Speed cameras and section controls have proven to be a very useful tool to enforce speed limits.<sup>35</sup>

One important element of effective speed enforcement is the combined use of traditional and automated methods.<sup>36</sup> This has been shown to be the single most important factor in the recent French road safety success. The French Road Safety Observatory estimated that 75% of the 31% drop in road deaths between 2002 and 2005 can be attributed to improved speed management built around the new automated camera system. In a 2004 survey, drivers declared that they drove more slowly, and that the main reason for that was fear of enforcement<sup>37</sup>.

*“Still, if all drivers and riders had obeyed the speed limit, the mean speed would have further decreased by 4km/h and another 770 deaths (out of 4,275 or 18%) would have been prevented in 2008. As average speeds have been stable in 2009, the same number of deaths would have been prevented in 2009 as well.”*

Jean Chapelon, road safety expert, France.

<sup>33</sup> <http://www.bfs.admin.ch/bfs/portal/fr/index/themen/19/04/01/ind11.html>.

<sup>34</sup> ETSC (2006), Traffic Law Enforcement across the EU, Time for a Directive.

<sup>35</sup> PACTS (2003), Speed cameras. 10 criticisms and why they are flawed. <http://www.slower-speeds.org.uk/files/10myths031220.pdf> and SWOV (2009), Speed cameras: how they work and what effect they have. SWOV Fact sheet, [http://www.swov.nl/rapport/Factsheets/UK/FS\\_Speed\\_cameras.pdf](http://www.swov.nl/rapport/Factsheets/UK/FS_Speed_cameras.pdf).

<sup>36</sup> EC Recommendation on Enforcement (2004) and ETSC (2006), Traffic Law Enforcement: Time for a Directive.

<sup>37</sup> Arrouet, J.-P. (2004), Conducteurs Français, vous avez changé. In : Circuler autrement 121, May-June 2004.

## One km/h slower would prevent more than 2,200 deaths a year

While the risk linked to speed varies across road types, a sound rule of thumb is that, on average, a 1% reduction in the mean speed of traffic leads to a 2% reduction in collisions resulting in injuries, a 3% reduction in collisions resulting in severe injuries and a 4% reduction in fatal collisions. This is explained by the well recognised “Power Model” showing the exponential relationship between increases in speed and the probability of collisions and their severity (Aarts and van Schagen<sup>38</sup>, based on Nilsson<sup>39</sup>).

Even minor reductions in mean speeds will therefore make an important contribution to reducing traffic deaths and injuries. ‘Low level’ speeding is often overlooked but has an important role on safety outcomes as it is far more common than driving at extremely high speeds.

Applying the “Power Model” to current numbers of deaths indicates that **if every driver slowed down by only 1km/h, more than 2,200 road deaths per year could be prevented**, among them 1,100 on urban roads, 1,000 on rural roads and 100 on motorways.

Country	Code	Yearly speed tickets per thousand population		
		2006	2007	2008
The Netherlands	NL	543	595	558
Austria	AT	327	458	456
Switzerland	CH	350	335	n/a
France	FR	114	127	138
Cyprus	CY	87	165	137
Slovenia	SI	n/a	n/a	72
Norway	NO	52	52	51
Romania	RO	n/a	n/a	51
Finland	FI	38	42	50
Latvia	LV	41	45	49
Denmark	DK	47	48	45
Spain*	ES	17	27	44
Luxembourg	LU	48	49	42
Ireland	IE	n/a	45	40
Poland	PL	28	32	34
Greece	EL	34	32	31
Israel	IL	22	22	30
Hungary	HU	17	16	29
Sweden	SE	21	24	25
Slovakia	SK	25	21	24
Italy*	IT	23	25	24
Bulgaria	BG	13	18	20
Czech Republic	CZ	30	21	17
Lithuania	LT	18	20	10
Portugal*	PT	9	n/a	n/a

Table 2: Number of speed tickets per 1,000 inhabitants (both Police roadside checks and from speed cameras). Source: PIN Panellists based on Police data.

\* See Annex – Chapter 3

<sup>38</sup> Aarts, L. & van Schagen, I. (2006). Driving speed and the risk of road crashes: a review, *Accident Analysis and Prevention*, 2006 Mar, vol. 38, issue 2, p.215-224.

<sup>39</sup> Nilsson, G. (1982). The effects of speed limits on traffic accidents in Sweden. In: *Proceedings of the international symposium on the effects of speed limits on traffic accidents and transport energy use*. OECD, p. 1-8.

Yearly numbers of speed tickets per thousand population are the highest in **the Netherlands, Austria and Switzerland**, where safety cameras and section controls have been used extensively. In contrast, being fined for speeding is rather the exception in **Portugal, Lithuania, the Czech Republic, Bulgaria, Italy, Slovakia, Sweden, Hungary, Israel and Poland** (Table 2).

*“At SWOV we believe that on average a driver passes a speed camera or speed check at least 300 times during one year of driving in the Netherlands.”*

Charles Goldenbeld, SWOV, the Netherlands.

*“We have just started to install safety camera in Lithuania, with 150 in place so far on motorways and national roads and 30 in Vilnius and Klaipeda. We hope to be able to install more in the future and improve speed compliance among Lithuanian drivers.”*

Vidmantas Pumputis, Ministry of Transport, Lithuania.

In **Spain**, the number of speed tickets has increased substantially, following the installation of safety cameras on the national road network (from 197 in 2006 to 295 in 2009). In **Cyprus**, a small scale safety camera pilot scheme was implemented from October 2006 to September 2007. Tickets from violations in 2007 continued to be issued in 2008.

*“The number of speeding tickets issued in Israel is very low in comparison with many countries. Speed offences represent only 17% of all offences. Unsurprisingly, average speeds are not decreasing and are even increasing on some parts of the network. It is regrettable to see that too many politicians, even some road safety professionals and policemen, as well as the general public, enjoy speeding and have not yet understood the dramatic consequences of excessive and inappropriate speeding on the roads. We still have a long way to go to achieve a cultural shift in our country.”*

Shalom Hakkert, the Ran Naor Foundation for Road Safety Research.

Other elements of a good speed management system include safe and credible speed limits that are in line with the road infrastructure<sup>40</sup>. The use of **Intelligent Speed Assistance (ISA)** technology will help to achieve a high level of compliance with speed limits and thereby reduce road deaths substantially. The European PROSPER project estimated reductions in deaths of up to 50% for individual countries (Carsten et al. 2006).

### 3.1.6 Speeding motorcycle riders

Motorcycle riders and passengers have at least 18 times the corresponding risk for a car driver of being killed in a road collision for the same distance travelled. Motorcycles are not required to have a licence plate in front and therefore remain unidentified by safety cameras that photograph from the front.

<sup>40</sup> See experience from the Netherlands (Safe System Approach), Sweden, the UK and many others. ETSC (2008) ShLOW Show me How Slow.

In France, motorcyclists have reduced their speed since 2002, but not to the same extent as other road users (Fig. 15). In 2008, more than 30% of motorcyclists were still riding at least 10km/h over the legal speed limit, against 12% for cars and heavy good vehicles. French Prime Minister François Fillon announced earlier this spring the adoption of new measures targeting motorcyclists. Safety cameras are progressively been replaced by new ones capable of catching motorcyclists from the rear. Dedicated police roadworthiness tests will deter engine tampering in mopeds and light motorcycles.

Governments should develop enforcement strategies targeted at motorcyclists. Riders should also be made aware of the difficulties other road users have in detecting power two wheelers and in evaluating their speed. The UK Association of Chief Police Officers has developed a national Motorcycle Enforcement Strategy since 2008<sup>41</sup>.

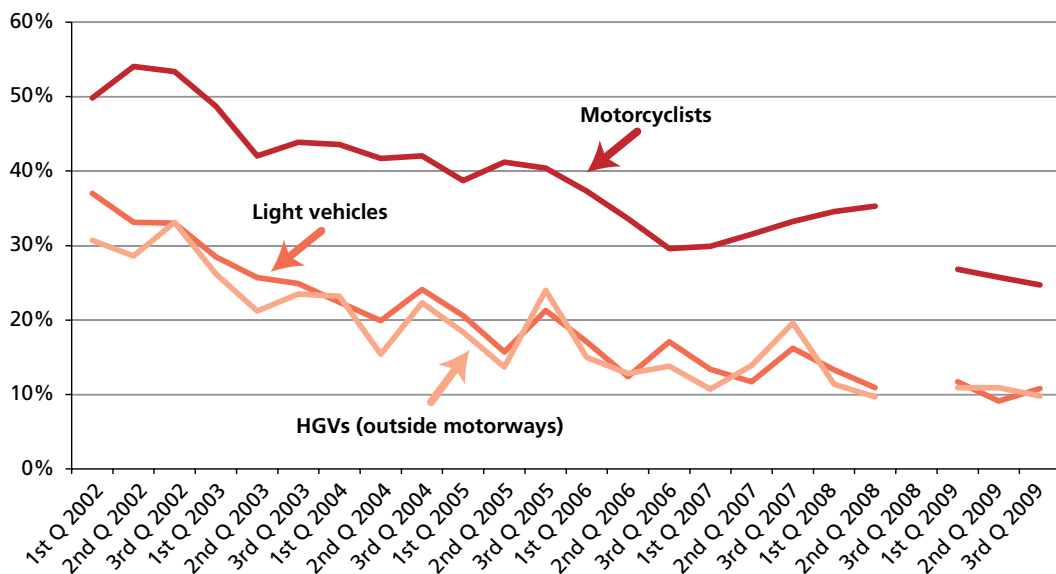


Fig. 15: Percentage of vehicles travelling at least 10 km/h above the legal speed limit in France.<sup>42</sup>

### 3.1.7 Speeding and Heavy Goods Vehicles (HGVs)

Because of their mass, a collision involving a truck or a bus is likely to cause severe harm to other road users. Management of speeds of buses and trucks is therefore a vital aspect of road safety. Directive 2002/85/EC requires the use of speed limitation devices for all vehicles over 3.5tonnes<sup>43</sup>. HGVs' speed compliance is therefore high on motorways but speed limiters only prevent HGVs from exceeding the national maximum speed limit. Great Britain - among others (France, Finland) - regularly monitors speed of HGVs<sup>44</sup>. Speed measurements in Great Britain in 2008 show that over 85% of HGVs exceeded the speed limit on dual carriageways other than motorways and 77% on single carriageways outside built-up areas. Over a third exceeded the limit by 15km/h or more.

<sup>41</sup> [http://www.acpo.police.uk/asp/policies/Data/motorcycle\\_enforcement\\_strategy\\_website.doc](http://www.acpo.police.uk/asp/policies/Data/motorcycle_enforcement_strategy_website.doc).

<sup>42</sup> ONISR, Observatoire des vitesses, February 2010. There is a break in the series as speed measurements stopped during the last four months of 2008.

<sup>43</sup> [http://ec.europa.eu/transport/infringements/directives/road\\_en.htm](http://ec.europa.eu/transport/infringements/directives/road_en.htm).

<sup>44</sup> Department for Transport, Road Statistics 2008: Traffic, Speeds and Congestion, <http://www.dft.gov.uk/adobepdf/162469/221412/221546/226956/261695/roadstats08tsc.pdf>.

## Speed reduction in occupational safety: the Swedish example of "Schenker-Ola"

The Swedish Transport Administration (former Swedish Road Administration) has been working intensively to engage private companies in road safety, in particular in encouraging their drivers to obey speed limits when driving for work. A working group called "Schenker-Ola" was created between the Swedish Transport Administration and the Swedish logistics' provider DB Schenker, and involving other actors as well such as the Swedish National Society for Road Safety (NTF). An in depth study of all serious collisions involving DB Schenker vehicles was carried out by the Swedish Transport Administration. Twice a year, DB Schenker received results from the Swedish Transport Administration's speed measurements of the company's vehicles. The measurements showed that speed was a problem, in particular on the roads with the lowest speed limits. The company adopted the objective of no excessive speeding by their drivers and committed to make sure that delivery schedules do not pressure drivers to speed.

See the Interview with Monica Jadsen Holmin in ETSC (2009), PRAISE Fact Sheet 1

<http://www.etsc.eu/documents/PRAISE%20Fact%20Sheet1.pdf>

### 3.1.8 Recommendations<sup>45</sup>

#### **Recommendations to Member States**

- Share international best practices in the enforcement of speed limits, including experience in using safety cameras and 'section control' cameras.
- Promote the introduction of owner or keeper liability as opposed to driver liability to facilitate enforcement of speed limits.
- Install safety cameras able to detect speeding riders and enforce their compliance with speed limits.
- As well as fixed safety cameras, introduce 'section control' or 'time over distance' cameras in places where speeding over appreciable distances is a problem.
- Incorporate speeding offences in penalty point systems, and make sure that levels of penalty escalate as the level of speeding above a speed limit increases.
- Adopt 30 km/h as the maximum speed in residential areas and promote traffic calming measures.
- Monitor development of speed patterns (mean speed and 85 percentile) and publish regular overviews of change for different road users.

#### **Recommendations to the EU**

- Prioritise measures to reduce speed in the 4<sup>th</sup> Road Safety Action Programme
- Re-table Directive on Cross Border Enforcement and through it encourage Member States to introduce minimum requirements to achieve high standards in the enforcement of speeding legislation as set out in the Commission's Recommendation on traffic law enforcement.
- Enforce the implementation of the Directive on infrastructure safety in the Member States, in particular the less well performing ones.
- Propose a maximum speed limit of 120km/h for its TEN-T high speed network.
- Initiate a technical assistance programme to support less well performing Member States to develop and pilot a national strategy on speed management. The approach might also include technical exchanges and twinning with other better performing countries.

<sup>45</sup> For further recommendations:

OECD (2007), Speed Management

ETSC Blueprint (2008), Road Safety as a Right and Responsibility for All

SUPREME (2007), Summary of Publications of best practice on Road Safety, EC funded project.

GRSP/WHO (2008), Speed Management: A Road Safety Manual for Decision-Makers and Practitioners

## 3.2 Progress in reducing drink driving deaths

Since 2001, deaths attributed to drink driving in the EU have decreased by about 5.7% on average each year, somewhat faster than other road deaths at about 4.2% per year (Fig. 16)<sup>46</sup>.

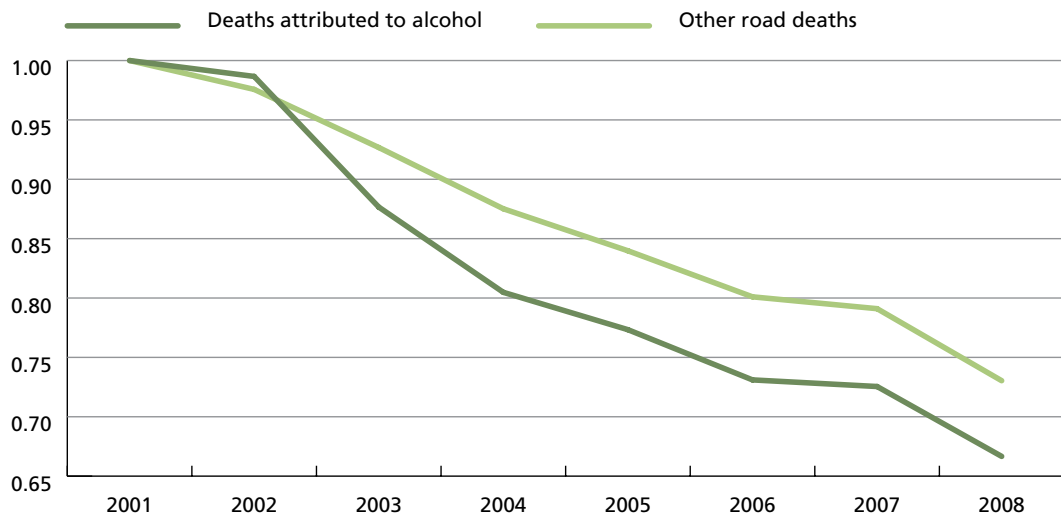


Fig. 16: Relative developments in deaths attributed to alcohol and other road deaths in 24 EU countries taken together over the period 2001 to 2008.

2001 (average 2000-2002) = 1.

### 3.2.1 Comparison between countries

Fig. 17 shows individual countries' progress in reducing deaths from drink driving collisions compared with progress in reducing other deaths, using each country's own method of identifying alcohol-related deaths. In half of the countries, progress in reducing drink driving has contributed more than its share to overall reductions in deaths. The **Czech Republic**, already ranking first for reductions up to 2005, keeps its leading position. Drink driving deaths were cut by ten percentage points faster than other deaths each year on average since 2001. Unfortunately the number of deaths attributed to drink driving increased in 2009. In **Slovakia** and **Bulgaria**, drink driving deaths fell by around 7 percentage points per year faster than other deaths. **Belgium**, **Greece**, **Lithuania**, **Germany**, **Switzerland** and **Poland** also reduced drink driving crashes appreciably faster than other road deaths.

In **Italy**, **Israel**, **Portugal**, **Romania**, **Finland** and **Estonia**, developments in drink driving deaths have appreciably slowed down overall progress in reducing road deaths. Governments of these countries need to attend to this trend and adopt a comprehensive strategy to tackle alcohol at the wheel.

*"Since 2002, several measures have been taken to address the high level of drink driving in Bulgaria. Fines have been increased substantially and sanctions tightened up. Novice drivers, drivers of vehicles carrying dangerous goods and bus drivers caught driving after drinking face higher sanctions. The media has been helpful in passing on the message to the public".*

Aleksi Kesiakov, Secretary of State for Transport, Bulgaria.

<sup>46</sup> Values estimated from data available for 24 EU countries.



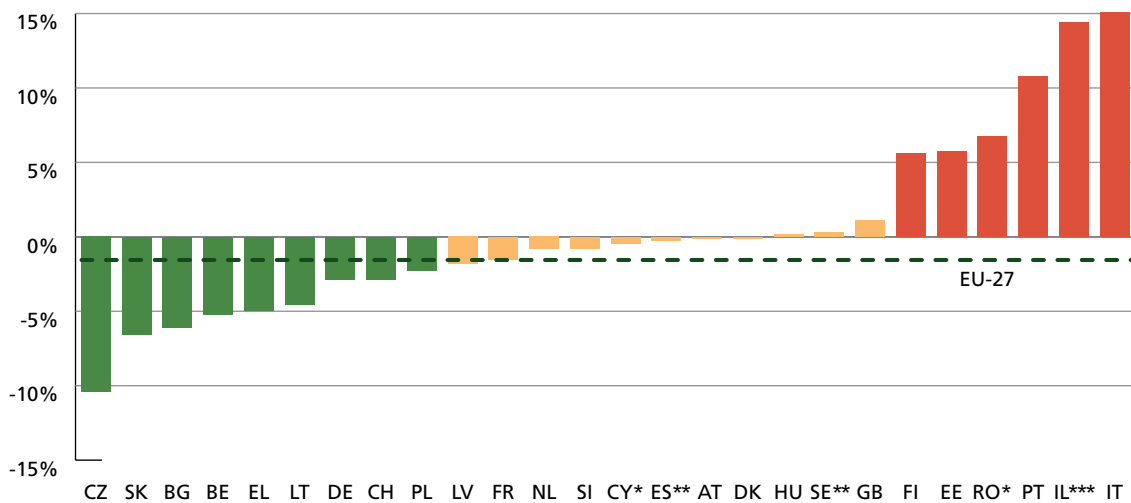


Fig. 17: Difference between the average annual percentage reduction in road deaths attributed to alcohol and the corresponding reduction for other road deaths over the period 2001-2008.

\* CY (2004-2008), EE (2001-2005), RO (2005-2008), IL (2004-2008).

\*\* Annual percentage change in driver deaths attributed to alcohol relative to total driver deaths (Spain, Sweden), Based on post mortem examinations.

\*\*\*IL: Since 2006, drivers involved in fatal crashes are systematically tested for alcohol (and cannot refuse to be tested) which could explain part of the increase in the number of drink driving deaths.

*“We reached our lowest level of drink driving deaths in 2007 with 41 deaths. Unfortunately deaths went up to 85 in 2008 and to 123 in 2009. Part of this increase can be most likely explained by the improvements in data collection during accident investigation. However, there should be no complacency towards tackling drink driving. This is why we introduced systematic breath testing in January 2010. All drivers stopped by the Police are now systematically breath-tested for alcohol.”*

Jindrich Fric, Czech Transport Research Centre (CDV).

*“We have a zero blood alcohol limit in Slovakia. The message sent by this limit is very clear: “never drink and drive”. Since 2005, awareness campaigns have been organised regularly together with visible police enforcement.”*

Karol Meliska, Ministry of Transport, Slovakia.

## The Indicator

Levels of deaths attributed to drink driving cannot be compared between countries, as there are large differences in the way in which countries define and record a 'road death attributed to drink driving'. Researchers in the European research project SafetyNet recommend comparing the drink driving situations in European countries using the definition of "any death occurring as a result of road accident in which any active participant was found with blood alcohol level above the legal limit"<sup>47</sup>. In most EU countries, however, among all road users, only drivers are tested for alcohol following a fatal collision. The extent to which drivers are tested and results are known varies considerably among countries<sup>48</sup>.

Countries are compared here on the basis of developments in deaths attributed to drink driving, relative to developments in other road deaths, using each country's own method of identifying alcohol-related deaths (Fig. 17). Countries are also compared in terms of developments in deaths attributed to drink driving (Fig. 18). Rates of change are comparable across countries in so far as procedures for recording deaths have remained consistent in the countries concerned during the reporting period. This ranking was first published in June 2007 in ETSC 1<sup>st</sup> PIN Annual Report available on [www.etsc.eu/PIN-publications.php](http://www.etsc.eu/PIN-publications.php). The indicators used there were the same as those used here, but the method of estimation has been improved in detail.

Numbers of deaths attributed to drink driving were supplied by the PIN Panellist in each country. Estimates of numbers of deaths attributed to drink driving are not available in Ireland, Luxembourg, Malta, Norway, Spain or Sweden. For Spain and Sweden we used in their place the numbers of killed drivers who tested positive in post-mortem blood alcohol tests. National definitions as provided by Panellists are available in the Annex - Chapter 3.

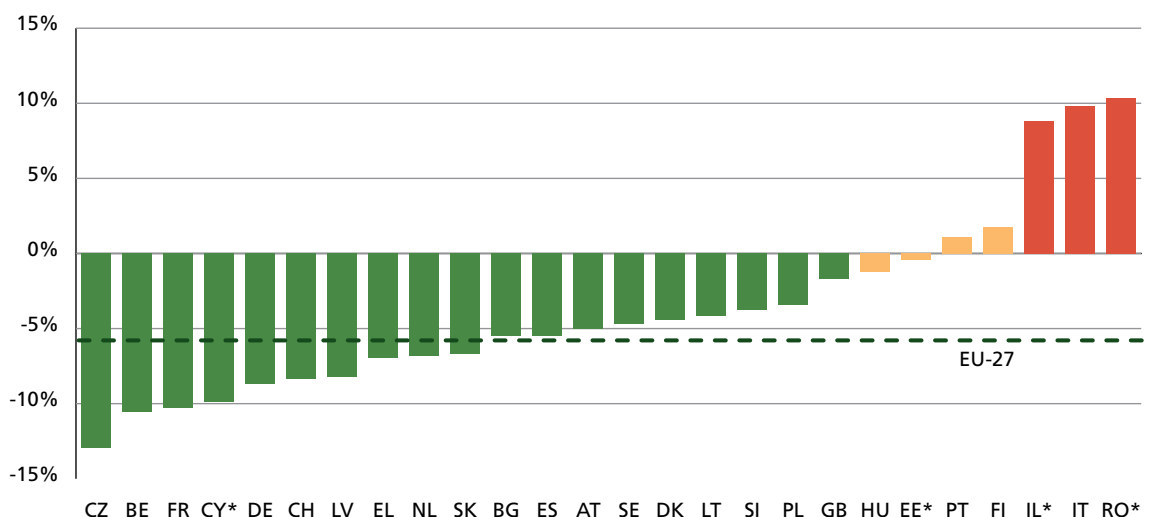


Fig. 18: Average annual percentage change in road deaths attributed to alcohol over the period 2001-2008.

\* CY (2004-2008), EE (2001-2005), RO (2005-2008), IL (2004-2008).

<sup>47</sup> Hakkert et al (2007) Road Safety Performance Indicators Manual, SafetyNet D.3.8: <http://euroris.swov.nl/safetynet/content/safetynet.htm>.

This Manual details each step for Member States to collect SPI in an harmonised way in the EU.

<sup>48</sup> Drivers killed on the spot might not be tested (the Netherlands, Germany, Belgium, etc) or testing might only occur when the Police suspects the presence of alcohol. ETSC (2007), 1<sup>st</sup> PIN Report, p. 27.

The reductions in deaths attributed to drink driving have been most impressive in the **Czech Republic**, **Belgium** and **France**, with reductions of more than 10% each year on average since 2000 (Fig. 18). On the contrary, in **Romania** and **Italy**, deaths attributed to drink driving have increased by about 10% on average each year. Even if some of this increase arises from improved reporting of drink driving deaths, as may well be the case in Israel, it still seems to be high.

*“It is disappointing to see that official numbers of road deaths attributed to alcohol in Italy have increased. However we believe that these numbers fail to provide a complete picture of the size of the drink-driving phenomenon in the country, which is much more alarming. Nevertheless, the number of road-side alcohol Police checks has significantly increased lately and some progress is being made”.*

Giordano Biserni, ASAPS.

Fig. 18 shows that France performs better than Germany in terms of absolute reduction in drink driving deaths, whereas Germany performs better in terms of relative reduction in drink driving deaths compared to other deaths (Fig. 17). In France, deaths attributed to drink driving dropped by 10.3% each year on average. In Germany, this was 8.7%. However, as other deaths were cut by 8.8% every year in France, and by 5.9% in Germany, the difference between the two developments was greater in Germany than in France. This difference between the two trends is reflected in Fig. 17 in which Germany ranks before France.

Following the rolling out of an extensive enforcement programme, driving speeds decreased outstandingly in France. As a consequence, alcohol has become the number one contributor to road crashes in France. It is estimated that, if all drivers respected the 0.5g/l BAC limit, 26% of road deaths could be prevented in France. One third of people killed in drink driving related crashes in France are from the age group 18 to 24. The government has proposed that night clubs install ‘alcotests’ so that drivers have the opportunity to test their BAC level before driving. The sale of alcohol will be prohibited in all petrol stations round the clock.

### 3.2.2 High under-reporting of drink driving deaths

The actual numbers of people killed due to drink driving are not known but in-depth studies have shown them to be considerably higher than those reported in national statistics. Numbers of deaths involving drink driving are estimated to be as high as **29% in France**<sup>49</sup>, **25% in the Netherlands**<sup>50</sup> and **17% in Austria**<sup>51</sup>. In **Ireland** where numbers of drink driving crashes are not available, an in-depth study of 2003 accident reports found that drink driving was a factor in 28% of all fatal crashes<sup>52</sup>.

The European Commission estimates that across the EU at least **25%** of all road deaths are alcohol related<sup>53</sup>, against 11.5% according to official statistics. At least **3,500** deaths could have been prevented if accident-involved drivers reported to be driving over the limit had been sober. On the same basis, however, the number of deaths that could have been prevented would be at least **7,500** if 25% of all deaths occur in collisions with a driver over the alcohol limit instead of the 11.5% attributed in official statistics.

<sup>49</sup> ONISR (2009), La sécurité routière en France. Bilan de l’année 2008, p.99-107.  
[http://www.securiteroutiere.gouv.fr/IMG/pdf/alcool\\_cle1125d1.pdf](http://www.securiteroutiere.gouv.fr/IMG/pdf/alcool_cle1125d1.pdf).

<sup>50</sup> Among this 25% of drink driving deaths, around two-thirds involve alcohol alone and the remaining one-third a combination of alcohol and drug use. Mathijssen & Houwing (2005), SWOV.

<sup>51</sup> Machata, K and Wannemacher, E (1998), Wie hoch liegt die Alkoholquote wirklich? Detailanalyse von Verkehrsunfällen mit Todesfolge im Land Niederösterreich. In Bartl, G. & Kaba, A. Alkohol im Strassenverkehr. Kuratorium für Verkehrssicherheit.

<sup>52</sup> Health Service Executive, 2006.

<sup>53</sup> [http://ec.europa.eu/transport/road\\_safety/specialist/knowledge/alcohol/index.htm](http://ec.europa.eu/transport/road_safety/specialist/knowledge/alcohol/index.htm).

According to Italian official Statistics based on Police data, the percentage of alcohol-related road deaths was only 4.3% in 2008 in Italy (208 drink-driving deaths compared to 4,739 total deaths). If the official definition of a drink driving death is “any death occurring as a result of a road accident in which at least one driver was found with BAC above the legal limit”, it seems that deaths are often attributed to drink driving only when alcohol is considered by the Police officer to be the unique contributory factor of the fatal accident<sup>54</sup>. Istituto Superiore di Sanità (ISS) estimates that the number of drink driving deaths is much higher; representing around 30% of total road deaths<sup>55</sup>.

### 3.2.3 Preventing drink driving: measures that work

#### **Lowering the BAC limit**

The European Commission has recommended Member States to apply a maximum legal blood-alcohol concentration (BAC) not exceeding 0.5g/l for all drivers and 0.2 g/l for novice and professional drivers<sup>56</sup>. Only Ireland, Malta and the UK have a higher limit than 0.5 for all drivers. **Ireland** will hopefully soon fall in line with the majority of the EU. A bill has indeed been presented by Noel Dempsey, Ireland’s Transport Minister, to the Irish Parliament to reduce the legal BAC limit from 0.8g/l to 0.2 for learner, novice and professional drivers and to 0.5 for all other drivers. This builds on Ireland’s mandatory alcohol testing introduced in July 2006 which was followed by a 22% drop in total road deaths in the first 12 months. The Road Traffic Bill 2009 also introduces mandatory alcohol testing of all drivers involved in collisions.

The **UK** might be next in line. The UK Transport Minister has appointed a senior lawyer, Sir Peter North, to look at the legal framework around drink- and drug-driving and report to the government. The report will advise on the case for changes to the prescribed alcohol limit for driving, meaning either reducing the current limit, or adding a new, lower limit, with an associated revised penalty regime. The report will also inform the next Road Safety Strategy for the UK.

Several countries, such as **Switzerland** and **Austria**, have lowered their national legal limit in the past few years. The experience from these two countries shows that such a legislative change together with strong enforcement and campaigning brings about reductions in alcohol related deaths.

#### **Enforcement**

Consistent and visible enforcement is a powerful deterrent to drink driving. Targeted breath testing coupled with publicity about enforcement increases drivers’ subjective perception of the possibility of being caught. Unfortunately, in a majority of EU countries being checked for alcohol is rather exceptional: 71% of drivers declared in a driver survey carried out in 2002/2003 in 23 countries that they had not been checked for drink driving over the past three years, and the likelihood of being tested was estimated to be very low (SARTRE 3, 2004).

<sup>54</sup> According to ASAPS (Associazione Sostenitori Amici Polizia Stradale), an NGO dedicated to improve road safety who supports the work of Traffic Police Forces.

<sup>55</sup> [http://www.epicentro.iss.it/temi/alcol/alcol\\_ebp.asp](http://www.epicentro.iss.it/temi/alcol/alcol_ebp.asp). Istituto Superiore di Sanità (ISS) is the technical and scientific public body of the Italian National Health Service.

<sup>56</sup> EC Recommendation of 17 January 2001 on the maximum permitted blood alcohol content (BAC) for drivers of motorised vehicles. [http://ec.europa.eu/transport/road\\_safety/topics/behaviour/fitness\\_to\\_drive/index\\_en.htm](http://ec.europa.eu/transport/road_safety/topics/behaviour/fitness_to_drive/index_en.htm).

Country	Code	2006		2007		2008	
		Roadside police tests per 1000 population	Percentage above legal limit	Roadside police tests per 1000 population	Percentage above legal limit	Roadside police tests per 1000 population	Percentage above legal limit
Finland	FI	n/a	n/a	318	1.6%	385	1.3%
Norway	NO	n/a	n/a	n/a	n/a	338	n/a
Sweden	SE	264	0.9%	292	0.8%	287	0.8%
Slovenia	SI	162	8.0%	191	7.3%	200	5.8%
France	FR	186	3.2%	182	3.3%	190	3.3%
Cyprus	CY	90	6.2%	149	6.8%	182	5.9%
Greece	EL	118	3.4%	143	2.9%	135	3.1%
Hungary	HU	144	2.9%	143	3.2%	130	3.1%
Ireland	IE	n/a	n/a	113	4.1%	128	3.2%
Spain	ES	88	2.5%	96	2.2%	112	1.8%
Estonia	EE	76	0.9%	68	1.0%	95	1.1%
Austria	AT	56	9.4%	77	7.0%	87	5.8%
Israel	IL	4	16.5%	24	5.1%	69	2.2%
Portugal	PT	48	7.3%	56	5.6%	63	5.9%
Poland	PL	n/a	n/a	n/a	n/a	47	9.5%
Lithuania	LT	31	1.4%	34	1.6%	40	1.7%
Denmark	DK	n/a	n/a	n/a	n/a	36	n/a
Italy	IT	4	n/a	12	n/a	23	n/a
Great Britain	GB	10	17.4%	10	16.3%	n/a	n/a

Table 3: Numbers of roadside alcohol breath tests (per 1,000 inhabitants) and percentage of those tested found to be above the legal limit.

Seventeen EU countries provided the number of roadside checks performed during one year by the police (Table 3). The number of roadside police checks for alcohol per 1,000 inhabitants is the highest in **Finland**, **Norway** and **Sweden**, where no less than 385, 338 and 287 drivers respectively per 1,000 population were checked in 2008. It is relatively high also in **Slovenia**, **France** and **Cyprus**. But, even in these countries, the chance of a driver being breath tested during one year is only about 1 in 5 on average.

The percentage of drivers found above the legal limit in these tests should be interpreted carefully because it is not clear how drivers are selected for testing, but it is lowest in **Sweden** and **Estonia**. In **Austria**, **Portugal**, and **Slovenia**, the percentage of checked drivers above the limit decreased as enforcement increased. Although enforcement increased also in **Cyprus**, the percentage of offenders there remains high.

*“Before 2000 in Greece, only 1 out of 20 drivers was checked for drinking and driving in a typical year. After a systematic 5-year gradual intensification of breath tests performed by the police, since 2005, 1 out of 4 drivers passes a random breath test site in a typical year. As a consequence, the presence of the police has gradually been perceived by the drivers, who have started to change their behaviour. This is confirmed not only by the decrease of the related offences reported, but also by the significant reduction of the number of accidents and fatalities due to drinking and driving”.*

George Yannis, Associate Professor at National Technical University of Athens.

*“In Israel, alcohol checks have gone up from less than 30,000 in 2006 up to more than 507,000 in 2008 (4 per 1,000 population in 2006 to 70 in 2008). As a result, drivers caught over the limit went down from 16.5% in 2006 to 2.2% in 2008. This is a very positive move into a change of drivers’ attitude towards drink driving in our country”.*

Tsippy Lotan, Or Yarak, Israel.

### **Systematic breath-testing in all Police checks relating to driver behaviour**

All drivers stopped by traffic police in Finland, Sweden, Norway, Lithuania, Austria, Cyprus, Hungary and Ireland are systematically breath-tested<sup>57</sup>. The Czech Republic has joined this group in 2010. Systematic breath testing increases deterrence by increasing probability of being breath-tested.

### **Sanctions and rehabilitation programmes**

Deaths attributed to drink driving decreased in **Hungary** from 161 in 2007 to 111 in 2008 (or –31%). Part of this change is due to the introduction of a “zero tolerance” of drink driving in January 2008. Whenever a driver is found to be under the influence of alcohol the driving licence is withdrawn immediately. So far 7,500 driving licences have been withdrawn due to drink driving.

With 42.5% of the total points withdrawn in 2006 for driving with a BAC over the legal limit, illegal drink driving is the number one offence penalised by penalty points in **Luxembourg**.

Fines and sanctions for drink driving have been increased in a number of countries over the past few years, including Austria, Germany, Spain, Lithuania, Slovakia and Bulgaria<sup>58</sup>. Recidivists are also offered rehabilitation courses and alcolocks in rehabilitation programmes in an increasing number of countries to encourage a change of attitude towards drink driving. The introduction of alcolocks, in rehabilitation programmes and for fleet drivers, could help to bridge the gap of insufficient police checks and to tackle recidivist offenders.

### **Campaigns and awareness raising**

Belgium is also the birthplace of the BOB campaign subsequently adopted by a majority of other Members States. The Bob campaign promotes the designation of a driver (Bob) who will not drink and will drive friends home. In 2009, the State Secretary Etienne Schouppe launched the campaign together with the IBSR, the Police and with representatives of the campaign sponsors. Over six weeks, 210,000 drivers were checked by the police, of those more than 7800 (3.7%) had an illegal BAC.

### **Alcohol labelling**

The Polish Brewers launched in 2008 a label to put on every beer can and bottle with the slogan: *“I never drive after I drink”.*

<sup>57</sup> Overview of good practices in strategic planning and tactical deployment of traffic law enforcement, Deliverable 5 of EU funded project PEPPER, [www.pepper-eu.org](http://www.pepper-eu.org).

<sup>58</sup> ETSC Drink Driving Monitors, <http://www.etsc.eu/documents.php?did=2>.

## EU Alcohol Strategy

The European Commission has adopted its first Progress Report on the implementation of the EU Alcohol Strategy of 2006. Roughly half of the Member States, most recently Germany and Luxembourg in 2007, have set a 0.2g/l or zero level for inexperienced drivers or certain groups of professional drivers. The application of random breath testing for surveillance of drink-driving, an example of good practice stated in the EU Strategy, has become more widespread in the EU since 2006. Examples of recent moves in this domain include the introduction of mandatory alcohol testing for drivers in Ireland (2006) and penalising refusal to take a test with imprisonment and loss of driving permit in Spain (2007). Other drink-driving countermeasures on the increase since the launch of the Strategy include prohibitions or restrictions on the sale of alcoholic beverages at petrol stations or at similar motorway services. In addition, the use of alcolocks, devices that prevent the vehicle from being started unless the driver passes a breathalyser test, has spread widely within the EU since 2006. Alcolocks have now been introduced as a safety measure in commercial or public service transport or as a component in rehabilitation programmes in roughly one third of Member States.

First progress report on the implementation of the EU alcohol strategy, Sept. 2009

[http://ec.europa.eu/health/ph\\_determinants/life\\_style/alcohol/documents/alcohol\\_progress.pdf](http://ec.europa.eu/health/ph_determinants/life_style/alcohol/documents/alcohol_progress.pdf)

### 3.2.4 Recommendations<sup>59</sup>

#### **Recommendations to Member States**

- Apply international best practices in tackling drink driving, in particular as set out in the 2004 EC Recommendation on traffic law enforcement.
- Intensify enforcement of laws against driving after drinking by setting targets for minimum level of alcohol checks of the motorist population, e.g. 1 in 5 motorists should be checked each year.
- Introduce systematic breath-testing in all Police checks relating to driver behaviour
- Introduce obligatory testing for alcohol for all road users involved in fatal accidents, if not in all injury collisions dealt with by the Police.
- Consider adopting a lower limit for commercial and novice drivers thus stressing the seriousness of drink driving among these two target groups.
- Organise regular nationwide campaigns to raise the public's understanding that drinking and driving is never a good mix.
- Consider the launch of a nationwide initiative for commercial organisations to consider drink driving by their workforces within the context of their business model.
- Develop the use of alcolocks in rehabilitation programmes.
- Consider extending the use of alcolocks for certain categories of drivers (e.g. bus drivers transporting children) and fleet drivers.

<sup>59</sup> ETSC Blueprint (2008), Road Safety as a Right and Responsibility for All  
GRSP/WHO (2007), Drink driving: A Road Safety Manual for Decision-Makers and Practitioners

### ***Recommendations to the EU***

- Re-table the Directive on Cross Border Enforcement and through it encourage Member States to introduce minimum requirements to achieve high standards in the enforcement of laws on drink driving as set out in the EC Recommendation on traffic law enforcement
- Work towards the adoption of standardised definitions of drink-driving and alcohol-related collisions and road deaths across the EU based on SafetyNet recommendations.
- Work on an EU-wide monitoring system to determine the prevalence of drink driving in the EU and rates of traffic deaths related to drink driving. This should include testing for alcohol for at least all drivers involved in fatal collision (if not all road users).
- Introduce harmonised standards for alcolocks in Europe.
- Consider adopting legislation making alcolocks mandatory for certain categories of drivers.



### 3.3 Seat belt wearing after 50 years of the seat belt

2009 marked the fiftieth anniversary of the three-point seat belt. It is estimated that seat belts have saved more than one million people that would have died in a road collision if not belted, thus being the biggest life saver on the roads. The seat belt remains the single most effective safety feature in vehicles. We estimate that **12,400** occupants of light vehicles in the EU survived serious collisions in 2009 alone because they wore a seat belt. Another **2,500** deaths could have been prevented if 99% of occupants had been wearing a seat belt, a rate that could be reached with seat belt reminders on all car seats<sup>60</sup>.

Despite the legal obligation to wear a seat belt in all the EU27<sup>61</sup>, seat belt use in light vehicles in the EU is estimated to be only 89% (Fig. 19) for front seats and as low as 72% for rear seats (Fig. 20). If some progress has been made, Eastern and Southern European countries still underperform.

#### 3.3.1 Seat belt wearing in front seats

Among the countries monitoring seat belt wearing regularly over recent years, **France, Germany, Sweden, the UK and the Netherlands** have the highest seat belt wearing rates with 95% or more drivers and front passengers buckling up (Fig. 19). In **Israel, Finland, Denmark, Norway and Ireland**, 90% or more drivers and front seat passengers wear their seat belt.

The **Czech Republic, Slovenia, Estonia, Austria, Switzerland, Portugal, Spain, Latvia** record rates between 80% and 90%. In **Poland, Cyprus, Belgium, Slovakia, Hungary, Greece and Italy**, rates are 80% or lower.

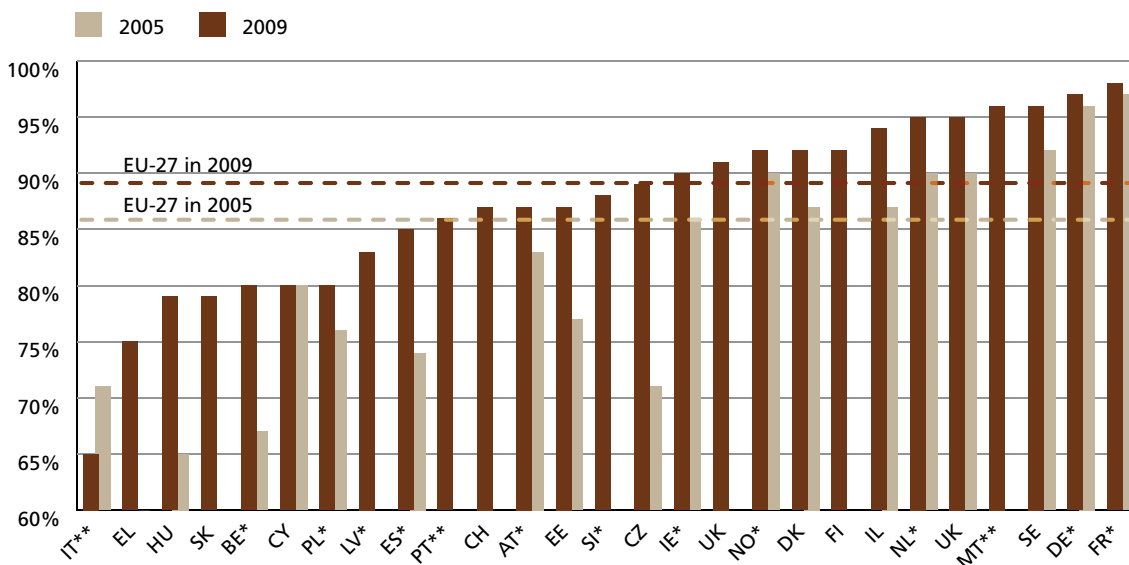


Fig. 19: Seat belt wearing rates on front seats of light vehicles in 2009, with 2005 data for comparison. \* 2008. \*\* 2007.

<sup>60</sup> See PIN Flash 16 Methodological Note, <http://www.etsc.eu/PIN-publications.php>.

<sup>61</sup> EU Directive 2003/20/EC extends the obligatory use of seat belts to occupants of all motor vehicles, including trucks and coaches.

Progress has been made in both front seat wearing and rear seat wearing in all countries monitoring seat belt use. Greatest progress has been made in the **Czech Republic, Estonia, Spain, Belgium** and **Hungary**. Despite the progress, there is still room for huge improvement – notably in **Belgium, Austria** and **Italy**, where the actual levels are out of line with those in neighbouring countries.

*“It is encouraging to see where good progress has been made, and disappointing when opportunities are missed. There is still a hard core of adults who do not wear their seat belts every time, particularly if they are travelling in the rear seat of a vehicle. I am deeply concerned that we are still catching thousands of people every year who are not wearing a seat belt,”*

TISPOL President Javier Sanchez-Ferragut.

*“In-depth accident investigations show that, in Finland, one in three people who are killed in vehicles was not wearing a seat belt, and half of those people would have been saved had they worn one. In Finland alone, that would represent 50 people each year who would still be alive today. Even the car equipped with the highest safety technologies will fail to protect its occupants if they are not belted. So, why do we tolerate 5 star EuroNCAP cars being used without a seat belt?”*

Esa Rätty, Finnish Motor Insurers' Center (VALT).

## The indicator

The usage rates used in this ranking present a simplified picture of a much more complex phenomenon. In reality, there is no clear-cut division between users and non-users of seat belts. Many people use the seat belt sometimes but not at all times, depending for example on what speed they are travelling at, what sort of road they are using, whether they are undertaking a longer journey, and whether there are other occupants wearing belts.

The proportion of car occupants using seat belts (i.e. the wearing rate) is estimated through roadside counts. Observers are placed at selected locations on all road types (in urban areas, on rural roads and on motorways), where traffic characteristics allow this type of observation. Data for different road types are then aggregated based on traffic shares per road type.

The EU-funded research project SafetyNet has developed stringent criteria for comparability of seat belt wearing rates across countries, as well as requirements for their accuracy and reliability. This country ranking used combined wearing rates for front seats. For countries where only separate rates for drivers and front seat passengers were presented, so that combined rates were unavailable, we applied the rules established by the SafetyNet project. Where only the driver rate was available, the front seat rate was considered to be identical to this rate (Hakkert et al 2007).

Seat belt wearing rates are not regularly collected in **Bulgaria, Italy, Lithuania, Luxembourg, Malta, Portugal** and **Romania**. Seat belt rates in rear seats are not collected in **Belgium, Cyprus, Slovakia** and **Slovenia**. Seat belt wearing rates were provided by PIN Panellists and are available in the Annex - Chapter 3.

### 3.3.2 Seat belt wearing in rear seats

For rear seat passengers the disparities between countries are much bigger: from above 80% in **Germany, Finland, UK, France, Spain and the Netherlands** all the way down to under 30% in **Cyprus, Greece, Malta, and Latvia** (Fig. 20).

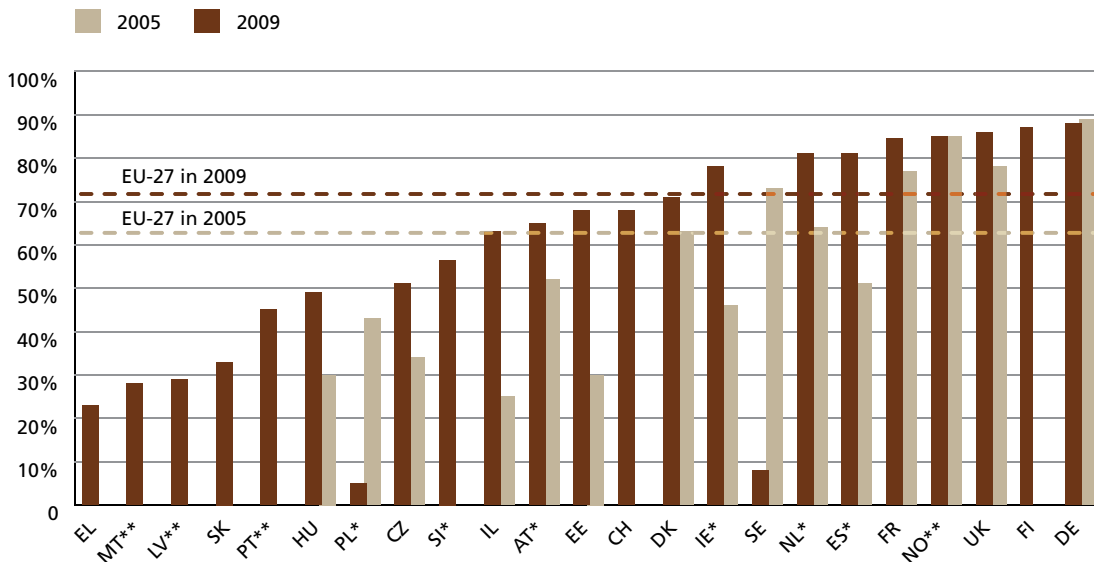


Fig. 20: Seat belt wearing rates in rear seats of light vehicles in 2009, with 2005 for comparison. (\* 2008. \*\*SafetyNet)

The consequences of not wearing belts in rear seats in cars are still widely underestimated. Unbelted rear passengers - who are thrown forward into the back of the front seats - significantly increase the risk of death for belted front-seat occupants.

#### Regional disparities

Seat belt wearing rates may differ substantially between regions. In Switzerland, the regional differences in seat belt wearing are well documented. Seat belt use in 2008 was 89% in the German-speaking region, 82% in the French-speaking region and 76% in the Italian speaking region<sup>62</sup>.

In Italy also, while some Northern regions record rates closed to 90% (Liguria, Lombardy and Veneto), rates in front seats are as low as 46% in the South. Rates are even lower in rear seats.<sup>63</sup>

<sup>62</sup> Swiss Council for Accident Prevention (2009), SINUS Report.

<sup>63</sup> Fondazione ANIA per la sicurezza Stradale on ASAPS data - [www.fondazioneania.it](http://www.fondazioneania.it).

### 3.3.3 Recommendations<sup>64</sup>

#### ***Recommendations to Member States***

- Apply international best practices in increasing the use of seat belt, in particular as set out in the 2004 EC Recommendation on traffic law enforcement, e.g. conduct intensive enforcement actions at least twice a year.
- Increase enforcement of seat belt use in both front and rear seats. Each driver stopped for whatever reason should be checked for seat belt wearing, as well as any passengers.
- Incorporate non-wearing of seat belt as an offence in penalty point systems.
- Collect yearly and monitor progress on seat belt wearing rates and use of child restraints based on SafetyNet standards.

#### ***Recommendations to the EU***

- Adopt legislation to ensure that every new car has as standard equipment an enhanced seat belt reminder system for front and rear seat occupants.

---

<sup>64</sup> ETSC Blueprint (2008), Road safety as a Right and Responsibility for All  
FIA/WHO (2009), Seat belts and child restraints: A Road Safety Manual for Decision-Makers and Practitioners.

### 3.4 Overview

The table presented here is not meant as a comprehensive summary. It is intended to give readers an indication of the areas where monitoring has shown a country's performance to be encouraging (green), moderate (yellow), disappointing (red), or where indicators are not yet monitored (grey). No country has a relatively good performance (green) in all nine indicators. All countries can improve, even the best performing ones. The format of this overview was inspired by the SUNflower+6 report (<http://sunflower.swov.nl>).

		SPEED ON MOTORWAYS		SPEED ON RURAL ROADS		DRINK DRIVING	SEAT BELT USE	
		Level	Trend	Level	Trend		Trend	Front seats
Austria	AT	Green	Yellow	Green	Yellow	Yellow	Yellow	Yellow
Belgium	BE	Grey	Grey	Yellow	Green	Green	Red	Grey
Bulgaria	BG	Grey	Grey	Grey	Grey	Green	Grey	Grey
Cyprus	CY	Grey	Grey	Grey	Grey	Yellow	Red	Red
Czech Republic	CZ	Grey	Grey	Green	Green	Green	Yellow	Yellow
Denmark	DK	Yellow	Red	Green	Yellow	Yellow	Green	Yellow
Estonia	EE	Grey	Grey	Green	Red	Red	Yellow	Yellow
Finland	FI	Yellow	Yellow	Green	Yellow	Red	Green	Green
France	FR	Green	Green	Yellow	Green	Yellow	Green	Green
Germany	DE	Grey	Grey	Grey	Grey	Green	Green	Green
Greece	EL	Grey	Grey	Grey	Grey	Green	Red	Red
Hungary	HU	Green	Grey	Yellow	Grey	Yellow	Red	Red
Ireland	IE	Green	Yellow	Yellow	Green	Grey	Yellow	Yellow
Israel	IL	Red	Grey	Red	Grey	Red	Green	Yellow
Italy	IT	Grey	Grey	Grey	Grey	Red	Red	Grey
Latvia	LV	Grey	Grey	Red	Green	Yellow	Yellow	Red
Lithuania	LT	Yellow	Red	Grey	Yellow	Green	Grey	Grey
Luxembourg	LU	Grey	Grey	Grey	Grey	Grey	Grey	Grey
Malta	MT	Grey	Grey	Grey	Grey	Grey	Green	Red
The Netherlands	NL	Yellow	Yellow	Grey	Grey	Yellow	Green	Green
Norway	NO	Grey	Yellow	Grey	Yellow	Grey	Green	Green
Poland	PL	Grey	Grey	Red	Red	Green	Red	Red
Portugal	PT	Grey	Grey	Grey	Grey	Red	Yellow	Red
Romania	RO	Grey	Grey	Grey	Grey	Red	Grey	Grey
Slovakia	SK	Grey	Grey	Grey	Grey	Green	Red	Red
Slovenia	SI	Grey	Grey	Green	Grey	Yellow	Yellow	Yellow
Spain	ES	Yellow	Green	Grey	Grey	Yellow	Yellow	Green
Sweden	SE	Grey	Yellow	Grey	Yellow	Yellow	Green	Green
Switzerland	CH	Yellow	Yellow	Yellow	Yellow	Green	Yellow	Yellow
UK	UK	Grey	Yellow	Grey	Yellow	Yellow	Green	Green

- Relatively good performance
- Moderate performance
- Relatively poor performance
- This specific set of data was not available

Speed on motorways	Level	Mean speed as percentage of speed limit for light vehicles on motorways with highest speed limit	< 90%	90 to 98%	> 98%
	Trend	Yearly average percentage change in mean speed of light vehicles on motorways with highest speed limit (Fig. 12a)	<-0,2% p.a	-0.2 to 0.2% p.a	> 0.2% p.a
Speed on rural roads	Level	Mean speed as percentage of speed limit for light vehicles on rural roads with highest speed limit	< 90%	90 to 98%	>98%
	Trend	Yearly average percentage change in mean speed of cars and vans on rural roads with highest speed limit (Fig. 13a)	< -0.5% p.a	-0.5% to 0.5% p.a	>0.5% p.a
Drink driving	Trend	Difference between the average annual percentage reduction in road deaths attributed to alcohol and the corresponding reduction for other road deaths over 2001-2008 (Fig. 17)	< -2% p.a	-2% to 2% p.a	> 2% p.a
Seat belt use in front seats	Level	Seat belt wearing rates on front seats of light vehicles (latest available year) (Fig. 19)	> 90%	80 to 90%	< 80%
Seat belt use in rear seats	Level	Seat belt wearing rates on rear seats of light vehicles (latest available year) (Fig. 20)	> 80%	50 to 80%	< 50%

### 3.5 Interview

Police forces are on the forefront of the battle against the three main killers on the roads. TISPOL, the European Traffic Police Network, organises joint enforcement actions in which police from across Europe join forces to tackle one safety law offence at a time. The last enforcement action tackled failure to wear a seat belt. During a week-long campaign in February 2010 no fewer than 123,000 penalties were issued. An enforcement campaign on speed is scheduled for late April and another one on drink driving in June, among others.

**Javier Sanchez-Ferragut**, Major of the Traffic Civil Guard in Madrid, Spain, is the current TISPOL President. He explained to ETSC how Police forces are engaged in preventing speeding, drink driving and the non use of seat belts.

*The new PIN country rankings show some countries making good progress, some not. What do you think of those findings? Were you surprised by any of them?*

We are committed to reducing deaths and serious injuries on Europe's roads. Of course it is encouraging to see where good progress has been made, and disappointing when opportunities are perhaps missed. Our task is to provide whatever assistance we can to the police forces and governments of every country. Those who have not emerged as the best performers particularly need our help, and this is central to our Lifesaver Project, which brings police officers together and encourages exchange of good practice. We are confident that one of the long-term effects of this activity will be to see more significant reductions in countries where the resources, legislative background and road infrastructure present particular challenges."

*Seat belt use has increased (in some countries considerably) over the past few years. There is still progress to be made on the rear seats though. What can be done?*

Although seat belt compliance rates are high in many countries, there is still a hard core of adults who do not wear their seat belts every time, particularly if they are travelling in the rear seat of a vehicle. I have seen figures to suggest that one in three people who are killed in vehicles is not wearing a seat belt, and half of those people could have been saved had they worn a seat belt. More than 123,000 people were caught not wearing a seat belt in a week of checks earlier this year. The seat belt is a vital safety tool, designed to protect drivers and passengers in the event of a collision. Despite continual safety warnings, I am deeply concerned that we are still catching thousands of people every year who are not wearing a seat belt.

Seat belts have saved countless lives since they were introduced on a wide scale in the 1970s. Large numbers of fatal or life-threatening head injuries and disfiguring facial lacerations are prevented or minimised by reducing the likelihood of car occupants colliding with the windscreen or being thrown from the vehicle in a crash. Not only are people who don't wear seat belts breaking the law, they are putting themselves and other car occupants at higher risk of death, serious injury and lifelong disability. Wearing a seat belt is easy, sensible and could save your life.

*Some progress has been made in reducing mean speed in countries where data is available. But up to 30% of drivers still exceed speed limits on motorways, up to 70% on roads outside built-up areas and as much as 80% in urban areas. Which road safety actions can prioritise speed, one of the biggest killers on the roads?*

As police officers, we try to stop a driver immediately after they have committed a speeding offence. There is a lot of merit in being able to confront a situation immediately, talk about it and then if necessary punish the offender. But that's not always possible. In some countries, automated enforcement improves the subjective chance of getting caught and TISPOL advocates the use of more automated systems – but to complement, not replace, police presence. The emphasis should still be on intelligence-led operations, the targeting of accident and incident hotspots and so on.

Automated speed enforcement will always run the risk of 'Big Brother syndrome' but I think we need to achieve a better balance. As I see it, there are the 'Three Es' to consider: Engineering, Education and Enforcement. Engineers all too often only consider enforcement right at the very end of a development process, and yet there's a lot to be learned from the front-end practitioners. That's where I see TISPOL stepping in: as well as promoting best practice across European police forces and influencing policy development at the European Commission level, it can provide systems designers and manufacturers with valuable insights.

*Since June 2008 TISPOL is running a European campaign called Lifesaver. Can you tell us what you aim to achieve with this project and how this can help?*

The Lifesaver project is a three year project from June 2008 to May 2011. It has benefits for all TISPOL member countries and will focus on six member states – Hungary, Poland, Portugal, Romania, Slovenia and Spain to assist them in their road traffic enforcement work. The project aims at an integrated approach to saving lives on Europe's roads. All three relevant levels of policing - the strategic, the tactical and the operational- are addressed.

*What would you like to say to the Siim Kallas, who has, as new Commissioner for Transport, the responsibility to present the 4th European Road Safety Action Programme which will shape road safety activity for the next ten years?*

The TISPOL Organisation urges that a challenging but achievable quantitative target be set for 2020 for reducing the number of people being killed on Europe's roads. If such a target is not set, we believe that some European countries will not give road safety the priority which they currently do nor will they devote the required resources in order to deliver improved road safety. At a time of great financial constraint, we have already seen evidence of cutbacks in the field of road safety. Without a target being set for 2020, we could see the economic situation having a more significant impact on road safety. It is also likely that road safety will not be given a priority in national plans and also in national policing plans and objectives. It is critical that road safety is included in those national plans so that reducing the carnage on Europe's roads is given the priority that it deserves in order to protect the citizens of Europe.



Javier Sanchez-Ferragut Andreu is the President of TISPOL and representative for Spain, where he is the Chief of the Commanding Secretary of the Traffic Civil Guard under direct orders of the Division General, Chief of the Traffic Civil Guard.



# 4 Recommendations

## 4.1 General recommendations

### *To Member States*

- Improve reliability and comparability of indicators using SafetyNet recommendations.
- Regularly monitor road user behaviour according to latest standards.
- Communicate compliance data to relevant stakeholders.
- Use the data to monitor achievements and identify shortcomings to be addressed.
- Set quantitative targets based on compliance indicators.
- Seek to reach these targets by all available means, including applying proven enforcement strategies according to the EC Recommendation on enforcement.

### *To EU Institutions*

- Adopt a new European Road Safety Action Plan for the period 2011 to 2020 which would propose a European vision, quantitative targets, a strategy and accompanying measures.
- Set ambitious but achievable quantified targets for reducing deaths and serious injuries of at least 40% by 2020.
- Use the evidence gathered under the Road Safety PIN to devise relevant policies including European standards on traffic law enforcement and road safety management.
- Support the implementation of in-car enforcement technologies such as seat belt reminders, alcolocks and Intelligent Speed Assistance technologies.
- Support countries in setting up data collection and evaluation procedures.
- Stimulate the use of harmonised protocols for accident, exposure and performance indicator data.

## 4.2 Serious injuries

### *Adopt serious injury targets for 2020 as part of the EU 4<sup>th</sup> Road Safety Action Programme*

- Each Member State should adopt national reduction targets for seriously injured (using their current definition of what is a serious injury) alongside the reduction of deaths. ETSC proposes that each Member State aims for at least a 40% reduction of seriously injured by 2020.
- The EU should work towards the adoption of an EU common definition of serious injuries to foster comparability.
- Member States and regional or local authorities should adopt targets for reducing excessive and inappropriate speed to reduce injury severity.

### *Improve quality of injury data*

- Member States should improve the recording of serious injuries by making use of both police and hospital records.
- The EU should develop and encourage Member States to adopt a simple injury scale (SIS) suitable for use by the Police and other emergency services and linked to the globally-accepted Abbreviated Injury Scale (AIS).
- Member States should provide training to Police and other emergency services in the use of the SIS. This would make injury data based on police reports more comparable between countries.
- Final classification of injuries according to severity should be performed in an appropriate proportion of cases by medical professionals using the AIS and trained in its correct use.

### ***Involve health professionals more effectively***

- In developing good practices and guidelines on essential trauma care and emergency services.
- In estimating the real social costs of road traffic injuries.
- In serving as opinion leaders to encourage decision makers to promote road safety legislation and to help educate the public.

### ***Improve post accident care***

#### *To Member States:*

- Include both pre- and post-hospital care in road safety strategies and make road injury a priority issue for the health sector.
- Provide the necessary support to make Emergency Telephone Number 112 and eCall operational as soon as practicable.
- Improve emergency response.
- Improve long-term hospital care and rehabilitation of road crash survivors.

#### *To EU institutions:*

- Adopt the ITS Directive making eCall one of the priority measures.
- Propose regulatory measures to implement eCall across the EU and include it in vehicle type approval.

### ***Create a road safety system that recognises the vulnerability of the human body.***

- Curb illegal and inappropriate speed, which will reduce injury severity in all kinds of collisions.
- Aim for a 100% use of seat belts in front and rear seats, helmets and child restraint systems.
- Fight drink driving and drug driving.
- Improve vehicle passive and active safety in particular protection against whiplash injury.
- Make roads and roadsides more protective and forgiving.

## **4.3 Tackle the three main killers on the road**

### ***Speed***

#### *To Member States*

- Share international best practices in the enforcement of speed limits, including experience in using safety cameras and 'section control' cameras.
- Promote the introduction of owner or keeper liability as opposed to driver liability to facilitate enforcement of speed limits.
- Install safety cameras able to detect speeding riders and enforce their compliance with speed limits.
- As well as fixed safety cameras, introduce 'section control' or 'time over distance' cameras in places where speeding over appreciable distances is a problem.
- Incorporate speeding offences in penalty point systems, and make sure that levels of penalty escalate as the level of speeding above a speed limit increases.
- Adopt 30 km/h as the maximum speed in residential areas and promote traffic calming measures.
- Monitor development of speed patterns (mean speed and 85 percentile) and publish regular overviews of change for different road users.

#### *To EU institutions*

- Prioritise measures to reduce speed in the 4th Road Safety Action Programme
- Re-table Directive on Cross Border Enforcement and through it encourage Member States to introduce minimum requirements to achieve high standards in the enforcement of speeding legislation as set out in the Commission's Recommendation on traffic law enforcement.

- Enforce the implementation of the Directive on infrastructure safety in the Member States, in particular the less well performing ones.
- Propose a maximum speed limit of 120km/h for its TEN-T high speed network.
- Initiate a technical assistance programme to support less well performing Member States to develop and pilot a national strategy on speed management. The approach might also include technical exchanges and twinning with other better performing countries.

### **Drink driving**

#### *To Member States*

- Apply international best practices in tackling drink driving, in particular as set out in the 2004 EC Recommendation on traffic law enforcement.
- Intensify enforcement of laws against driving after drinking by setting targets for minimum level of alcohol checks of the motorist population, e.g. 1 in 5 motorists should be checked each year.
- Introduce systematic breath-testing in all Police checks relating to driver behaviour
- Introduce obligatory testing for alcohol for all road users involved in fatal accidents, if not in all injury collisions dealt with by the Police.
- Consider adopting a lower limit for commercial and novice drivers thus stressing the seriousness of drink driving among these two target groups.
- Organise regular nationwide campaigns to raise the public's understanding that drinking and driving is never a good mix.
- Consider the launch of a nationwide initiative for commercial organisations to consider drink driving by their workforces within the context of their business model.
- Develop the use of alcolocks in rehabilitation programmes.
- Consider extending the use of alcolocks for certain categories of drivers (e.g. bus drivers transporting children) and fleet drivers.

#### *To EU institutions*

- Re-table the Directive on Cross Border Enforcement and through it encourage Member States to introduce minimum requirements to achieve high standards in the enforcement of laws on drink driving as set out in the EC Recommendation on traffic law enforcement
- Work towards the adoption of standardised definitions of drink-driving and alcohol-related collisions and road deaths across the EU based on SafetyNet recommendations.
- Work on an EU-wide monitoring system to determine the prevalence of drink driving in the EU and rates of traffic deaths related to drink driving. This should include testing for alcohol for at least all drivers involved in fatal collision (if not all road users).
- Introduce harmonised standards for alcolocks in Europe.
- Consider adopting legislation making alcolocks mandatory for certain categories of drivers.

### **Seat belt use**

#### *To Member States*

- Apply international best practices in increasing the use of seat belt, in particular as set out in the 2004 EC Recommendation on traffic law enforcement, e.g. conduct intensive enforcement actions at least twice a year.
- Increase enforcement of seat belt use in both front and rear seats. Each driver stopped for whatever reason should be checked for seat belt wearing, as well as any passengers.
- Incorporate non-wearing of seat belt as an offence in penalty point systems.
- Collect yearly and monitor progress on seat belt wearing rates and use of child restraints based on SafetyNet standards.

#### *To EU institutions*

- Adopt legislation to ensure that every new car has as standard equipment an enhanced seat belt reminder system for front and rear seat occupants.

# Bibliography

Aarts, L. & van Schagen, I. (2006), Driving speed and the risk of road crashes: a review, Accident Analysis and Prevention, vol. 38, issue 2, p: 215-24.

Arrouet, J.-P. (2004), Conducteurs Français, vous avez changé. In: Circuler autrement 121, May-June 2004.

Broughton et al. (2008), "Estimating the real number of road accident casualties", deliverable D.1.15, SafetyNet. <http://erso.swov.nl/>

Cauzard et al. (2004), European car drivers and road risk, Deliverable of the EU FP6 project SARTRE 3.

Department for Transport, Road Statistics 2008: Traffic, Speeds and Congestion, <http://www.dft.gov.uk/adobepdf/162469/221412/221546/226956/261695/roadstats08tsc.pdf>

Directive 2003/20/EC of the European Parliament and of the Council of 8 April 2003 amending Council Directive 91/671/EEC on the approximation of the laws of the Member States relating to compulsory use of safety belts in vehicles of less than 3,5 tonnes.

DfT (2009). Reported Road Casualties Great Britain: 2008. Annual Report.

DfT (2009), Road Statistics 2008: Traffic, Speeds and Congestion.

Dutch Road Safety Strategic Plan 2008-2020, [http://www.verkeerenwaterstaat.nl/english/topics/road\\_traffic\\_safety/](http://www.verkeerenwaterstaat.nl/english/topics/road_traffic_safety/)

EC Public consultation on the European Road Safety Action Programme 2011-2020.

EC Recommendation of 17 January 2001 on the maximum permitted blood alcohol content (BAC) for drivers of motorised vehicles. [http://ec.europa.eu/transport/road\\_safety/topics/behaviour/fitness\\_to\\_drive/index\\_en.htm](http://ec.europa.eu/transport/road_safety/topics/behaviour/fitness_to_drive/index_en.htm)

EC Communication 'eCall: time for Deployment' [http://ec.europa.eu/information\\_society/activities/esafety/ecall/index\\_en.htm](http://ec.europa.eu/information_society/activities/esafety/ecall/index_en.htm)

Elvik, R. et al. (2009), The Handbook of road safety measures.

ETSC (2006), Traffic Law Enforcement across the EU, Time for a Directive

ETSC (2007), 1<sup>st</sup> PIN Report, Raising compliance with Road Safety Laws

ETSC (2007), Social and Economic consequences of Road Traffic Injury in Europe

ETSC (2008) ShLOW Show me How Slow

ETSC (2008), A Blueprint for the EU's 4<sup>th</sup> Road Safety Action Programme, Road Safety as a Right and Responsibility for all

EuroRAP (2010), How Safe are Europeans on French Roads this Summer? [www.eurorap.org/library/pdfs/20100524\\_Low-Res French Report Final.pdf](http://www.eurorap.org/library/pdfs/20100524_Low-Res_French_Report_Final.pdf)

GRSP/WHO (2008), Speed Management: A Road Safety Manual for Decision-Makers and Practitioners.

Hakkert et al (2007) Road Safety Performance Indicators Manual, SafetyNet D.3.8,  
<http://euroris.swov.nl/safetynet/content/safetynet.htm>

IBSR (2009), Mesure nationale de comportement en matière de vitesse (2003-2007),  
Belgium Road Safety Institute.  
[http://bivvweb.ipower.be/Observ/FR/snelheid\\_fr\\_lowres.pdf](http://bivvweb.ipower.be/Observ/FR/snelheid_fr_lowres.pdf)

ONISR (Observatoire National Interministériel de Sécurité Routière), Observatoire des vitesses,  
[http://www.securiteroutiere.equipement.gouv.fr/IMG/pdf/observatoire\\_vitesses\\_3Q09\\_cle18cfd3.pdf](http://www.securiteroutiere.equipement.gouv.fr/IMG/pdf/observatoire_vitesses_3Q09_cle18cfd3.pdf)

Machata, K and Wannemacher, E (1998), Wie hoch liegt die Alkoholquote wirklich? Detailanalyse von Verkehrsunfällen mit Todesfolge im Land Niederösterreich. In Bartl, G. & Kaba, A. Alkohol im Strassenverkehr.

Mathijssen, R. & Houwing, S. (2005). The prevalence and relative risk of drink and drug driving in the Netherlands: a case-control study in the Tilburg police district; research in the framework of the European research programme IMMORTAL R-2005-9. SWOV.

Nilsson, G. (1982). The effects of speed limits on traffic accidents in Sweden. In: Proceedings of the international symposium on the effects of speed limits on traffic accidents and transport energy use. OECD, p. 1-8.

OECD/ECMT (2006) Speed Management,  
<http://www.internationaltransportforum.org/Pub/pdf/06Speed.pdf>

ONISR (2009), La sécurité routière en France. Bilan de l'année 2008.  
[http://www.securiteroutiere.gouv.fr/IMG/pdf/alcool\\_cle1125d1.pdf](http://www.securiteroutiere.gouv.fr/IMG/pdf/alcool_cle1125d1.pdf)

ONISR, Observatoire des vitesses, February 2010. There is a break in the series as speed measurements stopped during the last four months of 2008.

FACTS (2003), Speed cameras. 10 criticisms and why they are flawed,  
<http://www.slower-speeds.org.uk/files/10myths031220.pdf>

SUPREME (2007) Summary of Publications of best practice on Road Safety, EC funded project,  
[http://ec.europa.eu/transport/road\\_safety/pdf/projects/supreme.pdf](http://ec.europa.eu/transport/road_safety/pdf/projects/supreme.pdf)

Swiss Council for Accident Prevention (2009), SINUS Report Sicherheitsniveau und Unfallgeschehen im Strassenverkehr in 2008.

SWOV (2009), Speed cameras: how they work and what effect they have. SWOV Fact sheet,  
[http://www.swov.nl/rapport/Factsheets/UK/FS\\_Speed\\_cameras.pdf](http://www.swov.nl/rapport/Factsheets/UK/FS_Speed_cameras.pdf)

Wegman, F. and Aarts, L (2006), Advancing Sustainable Safety. National Road Safety Outlook for 2005-2020.

WHO Regional Office for Europe (2004), Preventing road traffic injury: a public health perspective for Europe.

## Web sites

1<sup>st</sup> Global Ministerial Conference on Road Safety:

[www.1300000.net](http://www.1300000.net)

Association of Chief Police Officer of England, Wales and Northern Ireland:

<http://www.acpo.police.uk/>

ERSO/ SafetyNet

<http://erso.swov.nl/>

EU Injury Database:

<https://webgate.ec.europa.eu/idb/>

European Commission, DG Mobility and Transport, Road Safety:

[http://ec.europa.eu/transport/road\\_safety/index\\_en.htm](http://ec.europa.eu/transport/road_safety/index_en.htm)

European Commission, DG Mobility and Transport, Alcohol, the scope of the problem:

[http://ec.europa.eu/transport/road\\_safety/specialist/knowledge/alcohol/index.htm](http://ec.europa.eu/transport/road_safety/specialist/knowledge/alcohol/index.htm)

Fédération Européenne des Victimes de la Route:

[www.fevr.org](http://www.fevr.org)

Fondazione ANIA per la sicurezza Stradale

[www.fondazioneania.it](http://www.fondazioneania.it)

International Classification of External Causes of Injury (ICECI).

<http://www.who.int/classifications/icd/adaptations/iceci/en/index.html>

International Road Traffic and Accident Database (IRTAD)

[http://www.oecd.org/document/53/0,2340,en\\_2649\\_34351\\_2002165\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/53/0,2340,en_2649_34351_2002165_1_1_1_1,00.html)

International Transport Forum (ITF)

<http://internationaltransportforum.org/irtad/index.html>

ITS Action Plan and Proposal for a Directive [http://europa.eu/legislation\\_summaries/transport/intelligent\\_transport\\_navigation\\_by\\_satellite/tr0010\\_en.htm](http://europa.eu/legislation_summaries/transport/intelligent_transport_navigation_by_satellite/tr0010_en.htm)

Police Enforcement Policy and Programmes on European Roads (PEPPER)  
[www.pepper-eu.org](http://www.pepper-eu.org)

Road Peace, National Charity for Road Crash Victims:  
[www.roadpeace.org](http://www.roadpeace.org)

SUNflower, SUNflower + 6 projects:  
<http://sunflower.swov.nl/>

Swiss Federal Statistical Office (FSO):  
<http://www.bfs.admin.ch/bfs/portal/fr/index/themen/19/04/01/ind11.html>

World Day of Remembrance of Traffic Victims  
<http://www.worlddayofremembrance.org/>

European Traffic Police Network  
[www.tispol.org/](http://www.tispol.org/)

*Websites accessed on 10 June 2010.*

# Annex - Chapter 1

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2009-2001
Latvia	558	559	532	516	442	407	419	316	254	-54%
Spain	5,517	5,347	5,400	4,749	4,442	4,104	3,823	3,100	2,668*	-52%
Portugal	1,670	1,668	1,542	1,294	1,247	969	974	885	839	-50%
Estonia	199	223	164	170	169	204	196	132	100	-50%
France	8,162	7,655	6,058	5,530	5,318	4,703	4,620	4,275	4,262*	-48%
Lithuania	706	697	709	752	773	760	739	498	370	-48%
Italy	7,096	6,980	6,563	6,122	5,818	5,669	5,131	4,739	4,050*	-43%
Israel	542	525	445	467	437	405	382	412	315	-42%
Ireland	411	376	335	374	396	365	338	279	241*	-41%
Germany	6,977	6,842	6,613	5,842	5,361	5,091	4,949	4,477	4,154*	-40%
Slovenia	278	269	242	274	258	262	293	214	171	-38%
Slovakia	625	626	653	608	600	608	661	606	385	-38%
Switzerland	544	513	546	510	409	370	384	357	349	-36%
Belgium	1,486	1,306	1,214	1,162	1,089	1,069	1,067	944	955*	-36%
Finland	433	415	379	375	379	336	380	343	281*	-35%
Sweden	551	532	529	480	440	445	471	397	358	-35%
Austria	958	956	931	878	768	730	691	679	633	-34%
Hungary	1,239	1,429	1,326	1,296	1,278	1,303	1,230	996	822	-34%
The Netherlands <sup>(1)</sup>	1,083	1,069	1,088	881	817	811	791	750	720	-34%
Czech Republic	1,334	1,431	1,447	1,382	1,286	1,063	1,222	1,076	901	-32%
Luxembourg	69	62	53	49	46	36	43	35	47*	-32%
UK	3,598	3,581	3,658	3,368	3,337	3,300	3,056	2,718	2,528**	-30%
Denmark	431	463	432	369	331	306	406	406	303	-30%
Cyprus	98	94	97	117	102	86	89	82	71	-28%
Norway	275	310	280	257	224	243	233	256	212	-23%
Greece	1,880	1,634	1,605	1,670	1,658	1,657	1,612	1,553	1,453*	-23%
Poland	5,534	5,827	5,640	5,712	5,444	5,243	5,583	5,437	4,572	-17%
Bulgaria	1,011	959	960	943	957	1,043	1,006	1,061	901	-11%
Romania	2,454	2,414	2,232	2,446	2,623	2,573	2,794	3,063	2,796	14%
Malta	16	16	16	13	17	11	14	15	21	31%
PIN	55,735	54,778	51,689	48,606	46,466	44,172	43,597	40,101	35,732	-36%
EU27	54,374	53,430	50,418	47,372	45,396	43,154	42,598	39,076	34,856	-36%
EU25	50,909	50,057	47,226	43,983	41,816	39,538	38,798	34,952	31,159	-39%
EU15	40,322	38,886	36,400	33,143	31,447	29,591	28,352	25,580	23,492	-42%
EU10	10,587	11,171	10,826	10,840	10,369	9,947	10,446	9,372	7,667	-28%
EU2 <sup>(2)</sup>	3,465	3,373	3,192	3,389	3,580	3,616	3,800	4,124	3,697	7%

**Table 1. Percentage change in road deaths between 2001 and 2009**  
(Chapter 1 - Fig.1)

Source: National statistics provided by the PIN panelists in each country.

Note: Figures in italic are different from CARE

\* Provisional figures or national estimates for 2009 as final figures for 2009 were not available at the time of going to print.

\*\*UK 2009: ETSC estimate based on EC CARE Quick indicator for GB only. The final count for GB will be available on the 24 June 2010 on [www.dft.gov.uk/pgr/statistics](http://www.dft.gov.uk/pgr/statistics)

<sup>(1)</sup> Figures have been corrected for police underreporting. In The Netherlands, the reported number of deaths is checked by Statistics Netherlands (CBS) and compared individually to the Death certificates and Court files of unnatural death.

<sup>(2)</sup> Romania and Bulgaria



Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2009-2008
Slovakia	625	626	653	608	600	608	661	606	385	-36%
Lithuania	706	697	709	752	773	760	739	498	370	-26%
Denmark	431	463	432	369	331	306	406	406	303	-25%
Estonia	199	223	164	170	169	204	196	132	100	-24%
Israel	542	525	445	467	437	405	382	412	315	-24%
Slovenia	278	269	242	274	258	262	293	214	171	-20%
Latvia	558	559	532	516	442	407	419	316	254	-20%
Finland	433	415	379	375	379	336	380	343	281*	-18%
Hungary	1,239	1,429	1,326	1,296	1,278	1,303	1,230	996	822	-17%
Norway	275	310	280	257	224	243	233	256	212	-17%
Czech Republic	1,334	1,431	1,447	1,382	1,286	1,063	1,222	1,076	901	-16%
Poland	5,534	5,827	5,640	5,712	5,444	5,243	5,583	5,437	4,572	-16%
Bulgaria	1,011	959	960	943	957	1,043	1,006	1,061	901	-15%
Italy	7,096	6,980	6,563	6,122	5,818	5,669	5,131	4,739	4,050*	-15%
Spain	5,517	5,347	5,400	4,749	4,442	4,104	3,823	3,100	2,668*	-14%
Ireland	411	376	335	374	396	365	338	279	241*	-14%
Cyprus	98	94	97	117	102	86	89	82	71	-13%
Sweden	551	532	529	480	440	445	471	397	358	-10%
Romania	2,454	2,414	2,232	2,446	2,623	2,573	2,794	3,063	2,796	-9%
Germany	6,977	6,842	6,613	5,842	5,361	5,091	4,949	4,477	4,154*	-7%
UK	3,598	3,581	3,658	3,368	3,337	3,300	3,056	2,718	2,528**	-7%
Austria	958	956	931	878	768	730	691	679	633	-7%
Greece	1,880	1,634	1,605	1,670	1,658	1,657	1,612	1,553	1,453*	-6%
Portugal	1,670	1,668	1,542	1,294	1,247	969	974	885	839	-5%
The Netherlands <sup>(2)</sup>	1,083	1,069	1,088	881	817	811	791	750	720	-4%
Switzerland	544	513	546	510	409	370	384	357	349	-2%
France	8,162	7,655	6,058	5,530	5,318	4,703	4,620	4,275	4,262*	-0%
Belgium	1,486	1,306	1,214	1,162	1,089	1,069	1,067	944	955*	1%
Luxembourg <sup>(1)</sup>	69	62	53	49	46	36	43	35	47*	34%
Malta <sup>(1)</sup>	16	16	16	13	17	11	14	15	21	40%
PIN	55,735	54,778	51,689	48,606	46,466	44,172	43,597	40,101	35,732	-11%
EU27	54,374	53,430	50,418	47,372	45,396	43,154	42,598	39,076	34,856	-11%
EU25	50,909	50,057	47,226	43,983	41,816	39,538	38,798	34,952	31,159	-11%
EU15	40,322	38,886	36,400	33,143	31,447	29,591	28,352	25,580	23,492	-8%
EU10	10,587	11,171	10,826	10,840	10,369	9,947	10,446	9,372	7,667	-18%
EU2 <sup>(3)</sup>	3,465	3,373	3,192	3,389	3,580	3,616	3,800	4,124	3,697	-10%

**Table 2. Percentage change in road deaths between 2008 and 2009**  
(Chapter 1 - Fig.3)

Source: National statistics provided by the PIN panelists in each country.

Note: Figures in italic are different from CARE

\* Provisional figures or national estimates for 2009 as final figures for 2009 were not available at the time of going to print.

\*\*UK 2009: ETSC estimate based on EC CARE Quick indicator for GB only. The final count for GB will be available on the 24 June 2010 on [www.dft.gov.uk/pgr/statistics](http://www.dft.gov.uk/pgr/statistics)

<sup>(1)</sup> In Luxembourg and Malta, the number of road deaths are small and thus subject to substantial annual fluctuation.

<sup>(2)</sup> Figures have been corrected for police underreporting. In The Netherlands, the reported number of deaths is checked by Statistics Netherlands (CBS) and compared individually to the Death certificates and Court files of unnatural death.

<sup>(3)</sup> Romania and Bulgaria

	2009			2001		
	Road deaths	Population	Road deaths per million population	Road deaths	Population	Road deaths per million population
Sweden	358	9,256,347	39	551	8,882,792	62
UK	2,528**	61,179,256 <sup>(1)</sup>	41	3,598	58,999,781	61
Israel	315	7,546,100	42	542	6,508,800	83
The Netherlands	720	16,485,787	44	1,083	15,987,075	68
Norway	212	4,799,252	44	275	4,503,436	61
Switzerland	349	7,701,856	45	544	7,204,055	76
Germany	4,154*	82,002,356	51	6,977	82,259,540	85
Malta	21	413,609	51	16	391,415	41
Finland	281*	5,326,314	53	433	5,181,115	84
Ireland	241*	4,450,014	54	411	3,832,973	107
Denmark	303	5,511,451	55	431	5,349,212	81
Spain	2,668*	45,828,172	58	5,517	40,476,723	136
France	4,262*	64,350,759	66	8,162	60,979,315	134
Italy	4,050*	60,045,068	67	7,096	56,960,692	125
Slovakia	385	5,424,925	71	625	5,378,951	116
Estonia	100	1,340,415	75	199	1,366,959	146
Austria	633	8,355,260	76	958	8,020,946	119
Portugal	839	10,627,250	79	1,670	10,256,658	163
Hungary	822	10,030,975	82	1,239	10,200,298	121
Slovenia	171	2,032,362	84	278	1,990,094	140
Czech Republic	901	10,467,542	86	1,334	10,266,546	130
Belgium	955*	10,666,866 <sup>(1)</sup>	89	1,486	10,263,414	145
Cyprus	71	796,875	89	98	697,549	140
Luxembourg	47*	493,500	95	69	439,000	157
Lithuania	370	3,349,872	110	706	3,486,998	202
Latvia	254	2,261,294	112	558	2,364,254	236
Bulgaria	901	7,606,551	118	1,011	8,149,468	124
Poland	4,572	38,135,876	120	5,534	38,253,955	145
Greece	1,453*	11,260,402	129	1,880	10,931,206	172
Romania	2,796	21,498,616	130	2,454	22,430,457	109
<hr/>						
PIN	35,732	519,244,922	69	55,735	502,013,677	111
EU27	34,856	499,197,714	70	54,374	483,797,386	112
EU25	31,159	470,092,547	66	50,909	453,217,461	112
EU15	23,492	395,838,802	59	40,322	378,820,442	106
EU10	7,667	74,253,745	103	10,587	74,397,019	142
EU2	3,697	29,105,167	127	3,465	30,579,925	113

**Table 3. Road deaths per million inhabitants in 2009 (with road deaths per million inhabitants in 2001 for comparison)**  
(Chapter 1 - Fig.4)

Source: National statistics provided by the PIN panelists in each country, completed with Eurostat for population figures.

\* Provisional figures or national estimates for 2009 as final figures for 2009 were not available at the time of going to print.

UK: ETSC estimate based on CARE

\*\*UK 2009: ETSC estimate based on EC CARE Quick indicator for GB only. The final count for GB will be available on the 24 June 2010 on [www.dft.gov.uk/pgr/statistics](http://www.dft.gov.uk/pgr/statistics)

<sup>(1)</sup> 2008 figures.

Country	Road deaths				Vehicle-km (in billion)				deaths per billion vehicle-km
	2007	2008	2009	Average road deaths (2007, 2008, 2009)	2007	2008	2009	Average vehicle-km (in billion) (2007, 2008, 2009)	
Sweden	471	397	358	409	79,384	80,883	81,260	80,509	5.1
UK	3,056	2,718	2,528**	2,785	532,996			532,996	5.2
Ireland	338	279	241*	286	48,219	49,253	48,575	48,682	5.9
Switzerland	384	357	349	363	59,612	60,407	60,918	60,312	6.0
Norway	233	256	212	234	38,349			38,349	6.1
Finland	380	343	281*	335	53,250	52,980	53,350	53,193	6.3
Germany	4,949	4,477	4,154*	4,527	692,000	690,100	n/a	690,100	6.6
Denmark	406	406	303	372	49,258	49,403	n/a	49,403	7.5
Israel	382	412	315	370	44,996	47,169	n/a	47,169	7.8
France	4,620	4,275	4,262*	4,386	560,200	552,400	551,900	554,833	7.9
Austria	691	679	633	668	74,418	75,669	n/a	75,669	8.8
Belgium	1,067	944	955*	989	98,790	97,770	n/a	97,770	10.1
Italy <sup>(1)</sup>	5,131	4,739	4,050*	4,640	459,974	443,845	n/a	443,845	10.5
Slovenia	293	214	171	226	16,882	17,703	n/a	17,703	12.8
Estonia	196	132	100	143	9,668	9,351	8,790	9,270	15.4
Czech Republic	1,222	1,076	901	1,073	53,624	55,322	n/a	55,322	19.4
Greece	1,612	1,553	1,453*	1,539	75,093	78,400	n/a	78,400	19.6
Latvia	419	316	254	330	14,115	12,989	11,179	12,761	25.8
Romania	2,794	3,063	2,796	2,884	58,852	67,869	71,409	66,043	43.7

**Table 4. Number of road deaths per billion vehicle kilometers driven**  
(Chapter 1 - Fig.6)

Source: National statistics provided by the PIN panelists in each country.

\* Provisional figures or national estimates for 2009 as final figures for 2009 were not available at the time of going to print.

\*\*UK 2009: ETSC estimate based on EC CARE Quick indicator for GB only. The final count for GB will be available on the 24 June 2010 on [www.dft.gov.uk/pgr/statistics](http://www.dft.gov.uk/pgr/statistics)

<sup>(1)</sup> Estimated number of vehicle kilometers driven is based on passenger cars only

## Annex - Chapter 2

Country	Definition of a seriously injured person in a road collisions in police records
<b>Austria</b>	Whether an injury is severe or slight is determined by §84 of the Austrian criminal code. A severe injury is one that causes a health problem or occupational disability for at least 24 days, or one that "causes personal difficulty". An injury or health problem that "causes personal difficulty" is one that affects an "important organ", if it results in a "health handicap", if the "healing process is uncertain", or if it leads to the fear of "additional effects". Police records
<b>Belgium*</b>	Hospitalised for at least 24 hours. But in practice no standardised communication between police and hospitals and the categorisation as "serious" is made by the police. Police records
<b>Bulgaria</b>	n/a. Police records
<b>Cyprus*</b>	Hospitalised for at least 24 hours. Police records
<b>Czech Republic*</b>	No official definition, but common approach is hospitalised for at least 24 hours. Police records
<b>Denmark*</b>	All injuries except "slight". Police records
<b>Estonia</b>	Separate statistics of serious and slight injuries are n/a
<b>Finland</b>	Separate statistics of serious and slight injuries are n/a
<b>France</b>	Until 2004: hospitalised for at least 6 days. From 2005: hospitalised for at least 24 hours. Police records. People injured are asked to go to the police to fill in information about the collision, in particular if they spent at least 24 hours as in-patient.
<b>Germany*</b>	Hospitalised for at least 24 hours
<b>Greece*</b>	Injury and injury severity are estimated by police officers. It is presumed that all persons who spent at least one night at the hospital are recorded as seriously injured persons. Police records
<b>Hungary</b>	Injuries which necessitated hospital care or causing health problems for at least 8 days. Police records
<b>Ireland*</b>	Hospitalised for at least 24 hours as an in-patient, or any of the following injuries whether or not detained in hospital: fractures, concussion, internal injuries, crushing, severe cuts and lacerations, several general shock requiring medical treatment. Police records
<b>Israel*</b>	Hospitalised more than 24 hours as in-patient. Police records
<b>Italy</b>	* Separate statistics on seriously and slightly injuries are n/a. It was estimated from sample studies made at the regional level that serious injuries represent around 35% of the total recorded injuries.
<b>Latvia</b>	From 2004: hospitalised more than 24 hours as in-patient. Police records
<b>Lithuania</b>	Hospitalised for at least 24 hours as in-patient. Police records
<b>Luxembourg*</b>	Hospitalised for at least 24 hours
<b>Malta</b>	Categorisation as "serious" is made by the police. Police records
<b>Netherlands*</b>	Hospitalised for at least 24 hours. Police records.
<b>Norway</b>	Very serious injury: Any injury that is life-threatening or results in permanent impairment. Serious injury: Any injury from a list of specific injuries; these would normally require admission to hospital as an in-patient. Police records
<b>Poland</b>	Serious injury: Serious disability, serious disease, a life threatening incurable or chronic disease, permanent mental disease, complete or substantial incapacity to work or a permanent or substantial scarring or disfiguration of the body and injuries such as fractures, damage to internal organs, serious cuts or lacerations. Police records
<b>Portugal*</b>	Hospitalised for at least 24 hours. Police records.
<b>Romania</b>	Injuries requiring hospitalisation or any of the following injuries whether or not they are detained in hospital: Organ injuries, permanent physical or psychological disability, body disfiguration, abortion, fractures, concussions, internal wounds, serious cuts or broken parts, or severe general shock which requires medical care and injuries causing death 30 or more days after the accident. Police records.
<b>Slovakia*</b>	Hospitalised for at least 24 hours. Police records.
<b>Slovenia</b>	Allocation made by the police. Police records
<b>Spain*</b>	Hospitalised for at least 24 hours. Police records
<b>Sweden*</b>	Hospitalised for at least 24 hours. Hospital records
<b>Switzerland*</b>	Hospitalised for at least 24 hours or if the injury prevented the person from doing its daily activity for 24 hours. Police records
<b>UK*</b>	Hospitalised for at least 24 hours or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushing, burns (excluding friction burns), severe cuts and lacerations, severe general shock requiring medical treatment and injuries causing death 30 or more days after the accident. An injured casualty is recorded as seriously or slightly injured by the police on the basis of the information available within a short time of the accident. This generally will not reflect the results of medical examination.

**Table 5: Definition of a seriously injured person in police records.**

*National definition provided by the PIN Panellists in each country.*

\* Group of countries considered as using similar definitions of serious injuries, spending at least one night in hospital as an in-patient or a close variant of this. The definition may include also a quite wide list of injuries and the allocation of "serious" is made by the police officer at the scene. Errors in the categorisation cannot be excluded.

Country	Code	2001	2002	2003	2004	2005	2006	2007	2008	Average annual % change
Austria	AT	8,207	8,043	7,984	7,591	6,922	6,774	7,147	6,783	-2.9%
Belgium <sup>(1)</sup>	BE	8,949	8,230	7,978	6,850	7,270	7,027	7,051	7,051	-4.4%
Bulgaria <sup>(1)</sup>	BG	7,990	8,099	8,488	9,308	10,112	10,215	9,827	9,827	4.0%
Cyprus	CY	1,015	945	900	960	741	730	708	661	-5.9%
Czech Republic	CZ	5,378	5,375	5,125	4,711	4,237	3,883	3,861	3,725	-5.3%
Denmark	DK	3,946	4,088	3,868	3,561	3,072	2,911	3,138	2,831	-4.6%
Estonia	EE		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Finland	FI		n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
France <sup>(2)</sup>	FR	26,192	24,091	19,207	17,435	39,811	40,662	38,615	34,965	-3.0%
Germany	DE	95,040	88,382	85,577	80,801	76,952	74,502	75,443	70,644	-4.4%
Greece <sup>(1)</sup>	EL	3,238	2,608	2,348	2,395	2,270	2,021	1,839	1,839	-8.8%
Hungary	HU	7,920	8,360	8,299	8,523	8,320	8,431	8,155	7,227	0.3%
Ireland <sup>(3)</sup>	IE	1,417	1,150	1,009	900	1,021	907	860	640	-9.7%
Israel <sup>(4)</sup>	IL	2,644	2,419	2,416	2,455	2,363	2,305	2,095	2,063	-3.3%
Italy	IT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	-2.5%
Latvia <sup>(2)</sup>	LV	n/a	n/a	n/a	1,222	810	630	638	791	-16.5%
Lithuania	LT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Luxembourg	LU	328	349	315	238	284	259	259	350	-2.6%
Malta	MT	262	314	247	264	257	277	246	248	-0.3%
The Netherlands	NL	11,028	11,018	10,596	9,487	9,401	9,051	9,683	9,310	-2.9%
Norway	NO	1,043	1,151	994	980	977	940	879	867	-2.3%
Poland	PL	19,311	18,831	17,251	17,403	15,790	14,659	16,053	16,042	-3.6%
Portugal	PT	5,797	4,770	4,659	4,190	3,762	3,483	3,116	2,606	-10.3%
Romania	RO	6,053	5,955	5,581	5,750	5,868	5,766	7,071	9,380	2.4%
Slovakia	SK	2,367	2,213	2,163	2,157	1,974	2,032	2,036	1,806	-3.4%
Slovenia	SI	2,481	1,561	1,399	1,398	1,292	1,259	1,295	1,100	-12.6%
Spain	ES	26,566	26,156	26,305	21,805	21,859	21,382	19,295	16,488	-5.4%
Sweden	SE	10,269	10,594	10,754	10,258	10,385	9,496	9,509	9,276	-1.0%
Switzerland	CH	6,194	5,931	5,862	5,528	5,059	5,066	5,235	4,780	-3.6%
UK <sup>(5)</sup>	UK	38,792	37,502	34,995	32,313	30,027	28,673	28,871	26,034	-5.5%
EU27 <sup>(6)</sup>		260,301	248,588	240,260	225,113	215,948	207,972	208,392	194,488	-4.1%
EU16 <sup>(7)</sup>		214,835	203,380	196,592	180,626	173,255	166,357	165,669	153,261	-4.7%

**Table 6. Serious injuries and annual average percentage change in serious injuries over the period 2001-2008**

<sup>(1)</sup> 2007 figures used for 2007 and 2008

<sup>(2)</sup> 24 hours as in-patient definition since 2004 (Latvia) and 2005 (France)

<sup>(3)</sup> 2008 provisional

<sup>(4)</sup> Some changes in the reporting during the period concerned

<sup>(5)</sup> 2008 figure refers to GB only

<sup>(6)</sup> Excl. FI, FR, IT, EE, LV, LT

<sup>(7)</sup> EU countries using a similar definition of serious injuries.

Country	Code	Change in serious injuries (%)	Change in road deaths (%)	notes
Latvia <sup>(1)</sup>	LV	-16.5	-10.2	
Slovenia	SI	-12.6	-1.7	
Portugal	PT	-10.3	-8.5	
Ireland	IE	-9.7	-3.8	
Greece	EL	-8.8	-2.8	
Cyprus	CY	-5.9	-1.3	
UK	UK	-5.5	-2.7	
Spain	ES	-5.4	-6.3	
Czech Republic	CZ	-5.3	-2.1	
Denmark	DK	-4.6	-2.8	
Germany	DE	-4.4	-5.9	
Belgium	BE	-4.4	-6.6	
Poland	PL	-3.6	-0.2	
Switzerland	CH	-3.6	-5.8	
Slovakia	SK	-3.4	-0.8	
Israel	IL	-3.3	-5.0	
The Netherlands	NL	-2.9	-5.3	
Austria	AT	-2.9	-4.8	
Luxembourg	LU	-2.6	-9.6	
Norway	NO	-2.3	-2.1	
France <sup>(1)</sup>	FR	-3.0	-7.3	
Sweden	SE	-0.8	-4	
Malta	MT	-0.3	-2.5	
Hungary	HU	0.3	-0.6	
Romania	RO	2.4	1.9	
Bulgaria	BG	4.0	-0.1	
EU27 <sup>(2)</sup>		-4.1	-3.3	
EU16 <sup>(3)</sup>		-4.7	-4.9	

**Table 7. Average annual percentage change in serious injuries and in deaths over the period 2001-2008.**  
(Chapter 2, Fig. 8 and 9)

<sup>(1)</sup> Latvia (2004-2008), France (2005-2008).

<sup>(2)</sup> EU-22 (EU 27 excluding Estonia, Finland, France, Italy, Latvia and Lithuania).

<sup>(3)</sup> Countries using a similar definition of 24 hours as in-patient for serious injuries

Country	Code	SERIOUS INJURIES (SI)			ROAD DEATHS (K)			SI per K			SI per K
		2006	2007	2008	2006	2007	2008	2006	2007	2008	2006-2008
Sweden - Hospital data	SE	9,496	9,509	9,276	445	471	397	21	21	21	21.5
Sweden - Police data	SE	3,959	3,824	3,657	445	471	397	9	8	9	9
Germany	DE	74,502	75,443	70,644	5,091	4,949	4,477	15	15	16	15
Switzerland	CH	5,066	5,235	4,780	370	384	357	14	14	13	14
The Netherlands	NL	9,051	9,683	9,310	811	791	750	11	12	12	12
UK	UK	28,673	28,871	26,034	3,300	3,056	2,718	9	9	10	9
France	FR	40,662	38,615	34,965	4,703	4,620	4,275	9	8	8	8
Cyprus	CY	730	717	661	86	89	82	9	8	8	8
Denmark	DK	2,911	3,138	2,831	306	406	406	10	8	7	8
Luxembourg	LU	259	259	350	36	43	35	7	6	10	8
Belgium	BE	7,027	7,051	7,051	1,069	1,067	922	7	7	8	7
Israel	IL	2,305	2,095	2,063	405	382	412	6	6	5	5
Spain	ES	21,382	19,295	16,488	4,104	3,823	3,100	5	5	5	5
Czech Republic	CZ	3,883	3,861	3,725	1,063	1,222	1,076	4	3	4	3
Slovakia	SK	2,032	2,036	1,806	579	627	558	4	3	3	3
Portugal	PT	3,483	3,116	2,606	969	974	885	4	3	3	3
Ireland	IE	907	860	640	365	338	280	3	3	2	2
Latvia	LV	630	638	791	407	419	316	2	2	3	2
Greece	EL	2,021	1,839	1,836	1,657	1,612	1,593	1	1	1	1
Average		215,020	212,261	195,857	25,766	25,273	22,639	8	8	9	9

**Table 8. Number of seriously injured recorded in national statistics per road deaths. (average of the years 2006-2008), for countries using similar definitions of serious injuries only. (Chapter 2 - Fig. 10)**

*In the case of Sweden, the number of seriously injured recorded by the police only (brown bar) is shown for comparison with the number of seriously injured recorded by hospitals.*

Country	Code	Serious Injuries (SI)			Road deaths (D)			Population in million (P)			D / P	SI / P
		2006	2007	2008	2006	2007	2008	2006	2007	2008		
Lithuania	LT**	n/a	n/a	n/a	760	739	498	3403	3385	3366	197	n/a
Latvia	LV*	630	638	791	407	419	316	2295	2281	2271	167	300
Greece	EL*	2021	1839	1836	1657	1612	1593	11125	11172	11214	145	170
Poland	PL	14659	16053	16042	5243	5583	5437	38157	38125	38116	142	408
Bulgaria	BG	10215	9827	9827	1043	1006	1061	7719	7679	7640	135	1296
Estonia	EE**	n/a	n/a	n/a	204	196	132	1345	1342	1341	132	n/a
Romania	RO	5766	7071	9380	2573	2794	3063	21610	21565	21529	130	343
Slovenia	SI	1259	1295	1100	262	293	214	2003	2010	2026	127	605
Hungary	HU	8431	8155	7227	1303	1232	996	10077	10066	10045	117	789
Cyprus	CY*	730	717	661	86	89	82	766	779	789	110	903
Slovakia	SK*	2032	2036	1806	579	627	558	5389	5394	5401	109	363
Czech Republic	CZ*	3883	3861	3725	1063	1222	1076	10251	10287	10381	109	371
Belgium	BE*	7027	7051	7051	1069	1067	922	10511	10585	10667	96	655
Portugal	PT*	3483	3116	2606	969	974	885	10570	10599	10618	89	290
Italy	IT	119864	117306	111250	5669	5131	4703	58752	59131	59619	87	1963
Austria	AT	6774	7147	6783	730	691	679	8266	8299	8332	84	831
Spain	ES*	21382	19295	16488	4104	3823	3100	43758	44475	45283	83	428
Luxembourg	LU	259	259	350	36	43	35	469	476	484	80	607
Ireland	IE*	907	860	640	365	338	280	4209	4313	4401	76	186
France	FR*	40662	38615	36179	4703	4620	4275	61167	61538	61876	74	618
Denmark	DK*	2911	3138	2831	306	406	406	5427	5447	5476	68	543
Finland	FI**	n/a	n/a	n/a	336	380	344	5256	5277	5300	67	n/a
Germany	DE*	74502	75443	70644	5091	4949	4477	82438	82315	82218	59	893
Israel	IL*	2305	2095	2063	405	382	412	7280	7282	7290	55	295
Norway	NO	940	879	867	243	233	255	4640	4681	4737	52	191
UK	UK*	28673	28871	26034	3300	3056	2718	60426	60817	61186	50	458
Switzerland	CH*	5066	5235	4780	370	384	357	7459	7509	7593	49	668
Sweden	SE*	9496	9509	9276	445	471	397	9048	9113	9183	48	1034
The Netherlands	NL*	9051	9683	9310	811	791	750	16334	16358	16405	48	571
Malta	MT	277	246	248	11	14	15	405	408	410	33	630

**Table 9. Killed and seriously injured per million population (average for the years 2006-2008).**  
(Chapter 2, Fig. 11)

\* Countries using a similar definition of 24 hours as in-patient for serious injuries.

\*\* Estonia, Finland, Lithuania or Italy do not collect number of serious injuries, only total injuries.

Our PIN Panellists for Italy estimated that the number of serious injuries represented about 35% of total injuries



## Annex - Chapter 3

MOTORWAYS							
Country	Code	Speed limit (in km/h)	Mean speed	Baseline	Mean speed	Latest available year	Mean speed yearly average % change
ES	ES (05-09) 120**	120	127.7	2004-2006	116.0	2009	-2.37%
LT	LT (01-06) 100*	100	98.3	2000-2002	92.2	2006	-1.27%
FR	FR (01-09) 130	130	126.0	2000-2002	117.6	2009	-0.86%
AT	AT (201-08) 130	130	120.8	2000-2002	117.0	2008	-0.45%
GB	GB (01-08) 113	113 km/h (70 miles/h)	112.7	2000-2002	111.0	2008	-0.21%
DK	DK (01-08) 110	110	118.4	2002-2004	117.2	2008	-0.21%
NL	NL (01-09) 120	120	115.3	2000-2002	114.9	2009	-0.05%
CH	CH (02-04) 120	120	109.9	2001-2003	109.8	2004	-0.03%
NO	NO (02-09) 100*	100	99.9	2001-2003	99.9	2009	0.00%
FI	FI (01-08) 120	120*	109.7	2000-2002	110.2	2008	0.07%
IE	IE (02-08) 120	120	106.0	2002-2003	107.0	2008	0.24%
DK	DK (05-08) 130	130	120.5	2004-2006	122.3	2008	0.50%
LT	LT (01-08) 110*	110	98.4	2000-2002	107.5	2008	1.28%

**Table 10a. Yearly average percentage change in mean speed of cars and vans on motorways (from earliest available baseline to latest available year).**  
(Chapter 3 - Fig. 12a)

\* All traffic

Finland: the speed limit is 120 km/h during summer and 100km/h during winter.

Netherlands: 2009 provisional.

\*\*Spain: data is available for only 20% of the toll motorways length in Spain.

RURAL ROADS

Country	Code	Speed limit (in km/h)	Mean speed	Baseline	Mean speed	Latest available year	Mean speed yearly average % change
FR	FR (01-09) 90 Dept.	90 Dept.	93.5	2000-2002	82.4	2009	-1.57%
BE	BE (04-08) 70	70	76.6	2003-2005	74.0	2008	-0.86%
IE	IE (03-08) 80&100	80	87.6	2002-2004	84.2	2008	-0.78%
CZ	CZ (06-09) 90	90	70.3	2005-2007	69.0	2009	-0.64%
LV	LV (06-09) 90*	90	90.6	2005-2007	89.0	2009	-0.57%
GB	GB (01-08) 113	113 km/h (70 miles/h)	112.2	2000-2002	107.9	2008	-0.56%
AT	AT (01-06) 70	70	68.5	2000-2002	67.1	2006	-0.40%
CH	CH (02-09) 80*	80	76.3	2001-2003	75.0	2009	-0.25%
FI	FI (01-08) 100	100	98.0	2000-2002	97.0	2008	-0.15%
DK	DK (03-08) 80	80	84.6	2002-2004	84.8	2008	0.04%
NO	NO (02-09) 80*	80	78.0	2001-2003	78.5	2009	0.09%
LT	LT (01-08) 90*	90	86.9	2000-2002	88.0	2008	0.10%
EE	EE (02-06) 110*	110	99.7	2001-2003	101.9	2006	0.55%
GB	GB (01-08) 97	97 (60 miles/h)	73.5	2000-2002	77.3	2008	0.71%
PL	PL (04-08) 90*	90	89.2	2003-2005	91.8	2008	0.71%

**Table 10b. Yearly average percentage change in mean speed of cars and vans on rural roads (from earliest available baseline to latest available year). (Chapter 3 - Fig. 13a)**

\* All traffic

URBAN ROADS

Country	Code	Speed limit (in km/h)	Mean speed	Baseline	Mean speed	Latest available year	Mean speed yearly average % change
CZ	CZ (05-09) 50	50	48.3	2004-2006	41.0	2009	-4.03%
IE	IE (02-08) 50	50	62.3	2002-2004	54.0	2008	-2.83%
GB	GB (01-08) 48	48 (30 miles/h)	51.0	2000-2002	48.0	2008	-0.88%
PL	PL (05-08) 50 *	50	64.7	2004-2006	63.1	2008	-0.81%
AT	AT (01-06) 30	30	35.4	2000-2002	34.4	2006	-0.55%
FR	FR (01-09) 50	50	51.6	2000-2002	49.7	2009	-0.47%
DK	DK (03-08) 50	50	53.1	2002-2004	52.2	2008	-0.35%
AT	AT (01-08) 50	50	51.6	2000-2002	51.0	2008	-0.18%
NO	NO (02-09) 50*	50	50.3	2001-2003	52.0	2009	0.43%
CH	CH (04-09) 50 *	50	43.0	2003-2005	44.0	2009	0.46%

**Table 10c. Yearly average percentage change in mean speed of cars and vans on urban roads (from earliest available baseline to latest available year)**  
(Chapter 3 - Fig. 14a)

Source: National statistics provided by the PIN Panelists in each country.

\* All traffic

In Poland, in 2004, the speed limit in urban areas was lowered from 60km/h to 50km/h between 6am and 11 pm (it remains 60km/h from 11pm to 5am).

## MOTORWAYS

Country	Vehicle type	Speed limit (in km/h)	2000		2001		2002		2003	
Austria	Cars/vans	130	119.7	22%	122.1	23%	120.5	28%	118.0	24%
Belgium	Cars/vans	120								
Bulgaria	Cars/vans	130								
Cyprus	all traffic	100 (on the left lane)								
	all traffic	100 (on the fast lane)								
Czech Republic	Cars/vans	130								
	all traffic	130								
Denmark	Cars/vans	110					120.1		119.1	
	Cars/vans	130								
Estonia			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Finland	Cars/vans	120	109.5		109.5		110.0		110.6	
	all traffic	120	107.0		107.0		107.5		106.9	
	Cars/vans	100	98.8		97.5		97.1		99.1	
	all traffic	100	97.6		96.5		96.1		97.8	
France	Cars/vans	110	109.5	55%	110.1	54%	111.9	59%	112.1	59%
	Cars/vans	130	126.5	50%	125.6	47%	126.0	47%	124.2	42%
Germany			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Greece		130	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hungary	Cars/vans	130								
	all traffic	130								
	Cars/vans	80								
Ireland	Cars/vans	120					106.0	24%	106.0	23%
Israel	Cars/vans	110								
	all traffic	110							104.0	
Italy		130	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Lithuania	all traffic	100	96.0	43%	100.4	54%	98.4	35%	94.7	36%
	all traffic	110	98.4	34%	97.2	32%	99.5	28%	99.2	28%
	all traffic	130			105.7	12%	109.0	12%	103.9	12%
Luxembourg	all traffic	110								
	all traffic	130								
Malta			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
The Netherlands	Cars/vans	100	97.9	46%	95.1	40%	97.8	45%	97.8	45%
Norway	Cars/vans	120	115.7	42%	115.0	38%	115.3	39%	116.1	42%
	all traffic	90								
Poland	all traffic	100			99.9		99.9		99.9	
		130								
Portugal	Cars/vans	120	124.0	54%			118.0	46%		
Romania		130								
Slovakia		130								
Slovenia	all traffic	130								
Spain**	Cars/vans	120								
	all traffic	120								
Sweden	Cars/vans	110			108.6	62%	110.1	65%	110.9	65%
	all traffic	110			105.5	65%	106.8	68%	107.9	68%
Switzerland	Cars/vans	120			108.6		110.1		110.9	
	all traffic	120	112.0	35%	112.0	34%	114.0	38%	114.0	38%
Great Britain	Cars/vans	113 (70 miles/h)	112.7	55%	112.7	54%	112.7	54%	114.3	57%

Mean speed
  Vehicles exceeding the speed limit (%)
  Countries included in Fig. 12a and 12b.

2004		2005		2006		2007		2008		2009	
118.5	23%	119.7	25%	119.9	23%	118.0	22%	117.0	19%		
120.0		120.3		121.0							
120.0		120.3		121.0							
				98.0	30%						
				112.0	75%						
107.0	11%	116.0	25%	105.0	35%						
107.0	31%	108.0	39%	112.0	75%						
116.1		115.4		116.0		117.1	68%	117.2	70%		
120.0		120.3		121.0		122.2	31%	122.3	32%		
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
110.1		110.6		110.0		111.0		110.2			
106.3		106.8		106.0		106.8		106.2			
100.2		100.7		100.1		99.8		99.0			
98.8		99.3		98.8		98.4		97.7			
110.7	54%	109.0	50%	109.4	52%	109.4	50%	108.2	47%	106.5	41%
120.7	31%	119.0	33%	119.4	34%	120.0	31%	118.2	32%	117.6	26%
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
				119.5	56%	112.3	48%	115.8	32%		
				113.8		110.5		110.4			
				84.6	85	82.3	77%	83.8	80%		
108.0	19%	109.0	15%	110.0	20%	108.0	14%	107.0	15%		
										119.0	77%
										108.0	48%
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
95.1	39%	95.8	37%	92.2	31%						
99.5	30%	103.9	36%	104.0	41%	107.3	21%	107.5	21%		
106.3	14%	108.7	18%	110.9	20%	110.9	21%	111.4	21%		
				105.0	5%						
				115.0	5%						
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
97.6	47%	96.6	45%	95.5	41%	95.4		95.9		96.7	
114.8	36%	114.2	36%	114.4	36%	114.0		113.8		114.9	
86.6	45%	85.6	34%	83.0	35%						
99.9	55%	99.7	49%	99.7	51%	99.5		99.5		99.1	
121.0	54%										
								115.0		120.5	
132.0	73%	127.0	64%	124.0	57%	119.0	43%	114.0	30%	116.0	35%
124.0	67%	120.0	58%	119.0	48%	114.0	39%	110.0	27%	110.0	29%
109.8	64%										
106.3	68%										
109.8											
111.0	30%	111.0	29%	110.0	26%	107.0	21%	109.0	22%	109.0	24%
114.3	56%	114.3	56%	112.7	53%	113.0	53%	111.0	49%		

**Table 11. Mean speed and percentage of vehicles exceeding speed limits on motorways.**  
(Chapter 3, Fig. 12a, 12b and 12c)

Source: National statistics provided by the PIN Panelists in each country.

Finland: the speed limit is 120km/h during summer and 100km/h during winter.

Latvia: no motorway network

Netherlands: 2009 provisional.

\*\*Spain: data is available for only 20% of the toll motorways length in Spain.

## RURAL ROADS

Country	Vehicle type	Speed limit (in km/h)	2000		2001		2002		2003	
Austria	Cars/vans	70	67.7	35%	68.0	38%	69.7	44%	67.9	49%
	Cars/vans	100	90.3	19%	89.0	19%	88.7	19%	91.4	24%
Belgium	Cars/vans	70							77.1	68%
	Cars/vans	90							94.3	56%
Bulgaria		90	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cyprus	all traffic	80								
Czech Republic	Cars/vans	90								
	all traffic	90								
Denmark	Cars/vans	80					85.0	65%	84.9	71%
Estonia	all traffic	90			93.3	23%	91.1	16%	93.3	20%
	all traffic	110			99.1	3%	98.7	3%	101.3	4%
	Cars/vans	80	82.0	63%	82.0	64%	81.5	62%	81.2	61%
Finland	all traffic	80	81.9	63%	81.8	64%	81.3	62%	81.1	61%
	Cars/vans	100	97.1	46%	98.6	54%	98.3	53%	98.8	55%
	all traffic	100	95.5	40%	96.7	46%	96.3	45%	96.2	47%
France	Cars/vans	90 (national roads)	89.4	53%	90.1	53%	88.1	47%	85.3	38%
	Cars/vans	90 (departemental roads)	94.6	61%	93.1	59%	92.9	60%	90.0	80%
	Cars/vans	110	112.2	55%	112.4	57%	112.3	58%	109.1	50%
Germany			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Greece			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Hungary	Cars/vans	90								
	Cars/vans	80								
	all traffic	90 (1st class main roads)								
Ireland	Cars/vans	80 & 100 (aggregated)					89.1		86.4	
Israel	Cars/vans	90								
	all traffic	90							96.0	
Italy	Cars/vans	90								
	all traffic	90								
Latvia	all traffic	90 (main roads)								
Lithuania	Cars/vans	90								
	all traffic	90	84.0	36%	87.8	44%	89.0	44%	86.3	44%
Luxembourg		90	n/a							
Malta		80	n/a							
The Netherlands		80	n/a							
Norway	all traffic	70								
	all traffic	80			78.2		78.3		78.0	
Poland	all traffic	90							89.9	65%
Portugal	Cars/vans	90 (access controlled)	104.0	72%			97.0	65%		
	Cars/vans	90 (not access controlled)	98.0	59%			92.0	55%		
Romania		90	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slovakia	Cars/vans	90	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	all traffic	90								
Spain		90	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	Cars/vans	70	67.8	55%	67.9	54%	67.8	54%	67.8	54%
Sweden	Cars/vans	90	89.1	51%	89.5	53%	89.6	53%	90.7	56%
	Cars/vans	110	108.6	51%	109.9	55%	111.5	60%	111.2	59%
Switzerland	all traffic	80			78.0	35%	76.0	27%	75.0	24%
Great Britain	Cars/vans	97 (60 miles/h)	72.5	9%	72.5	9%	75.7	8%	77.3	9%
	Cars/vans	113 (70 miles/h)	112.7	52%	112.7	51%	111.1	46%	111.1	50%

Mean speed
  Vehicles exceeding the speed limit (%)
  Countries included in Fig. 13a and 13b.

2004		2005		2006		2007		2008		2009	
67.8	37%	69.7	44%	67.1	36%						
88.8	18%	88.3	17%	90.8	21%	89.0	17%	89.0	20%		
78.1	70%	74.6	59%	76.9	66%	74.0	60%	74.0	60%		
88.3	41%	88.6	42%	82.5	29%	86.9	39%	85.1	34%		
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
				88.0	55%						
		71.0	31%	70.0	11%	70.0	14%	69.0	14%	69.0	17%
		70.0	32%	68.0	15%	69.0	16%	68.0	14%	68.0	17%
84.0	69%	83.3	65%	83.4	66%	84.7	71%	84.8	72%		
94.3	25%	94.3	23%	94.9	25%						
100.1	3%	101.2	3%	101.9	4%						
81.5	62%	81.7	61%	82.0		82.0		81.0			
81.4	62%	82.0	61%	81.0		81.0		80.0			
98.7	54%	98.2	51%	98.0		98.0		97.0			
94.9	46%	95.7	44%	96.0		96.0		95.6			
83.8	37%	81.4	27%	80.3	27%	80.6	24%	79.4	31%	79.2	20%
87.8	49%	86.1	42%	84.5	37%	83.3	33%	82.2	22%	82.4	30%
103.5	42%	99.1	32%	100.4	27%	99.0	25%	98.4	20%	98.5	20%
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
				82.0	27%	82.8	33%	82.0	30%		
				71.2	50%	71.8	61%	72.1	61%		
76.6				79.7		79.2		79.5			
87.2		87.9		82.5		80.8		84.2			
										95.0	68%
										92.0	60%
		88.2	42%	90.9	49%	92.6	54%	91.2	50%	89.0	43%
88.0	43%	87.6	41%	88.0	44%	89.0		87.6	35%		
70.3	62%	69.8	55%	69.8	57%						
78.3	46%	78.7	46%	79.0	45%	78.8		78.9		78.5	
88.4	63%	89.4	65%	89.2	63%	89.8	64%	91.8	70%		
106.0	82%										
102.0	74%										
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
								63.0		62.9	
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
68.4	55%										
88.9	50%										
111.4	60%										
73.0	19%	75.0	26%	72.0	16%	75.0	24%	75.0	30%	75.0	30%
77.3	10%	78.9	11%	77.3	10%	77.0	10%	77.0	10%		
111.1	48%	111.1	48%	109.5	45%	111.0	45%	108.0	41%		

**Table 12. Mean speed and percentage of vehicles exceeding speed limits on rural roads.**  
(Chapter 3, Fig. 13a, 13b and 13c)

Source: National statistics provided by the PIN Panelists in each country.

## URBAN ROADS

Country	Vehicle type	Speed limit (km/h)	2000		2001		2002		2003	
Austria	Cars/vans	30	37.4	83%	33.4	66%	35.3	79%	36.7	82%
	Cars/vans	50	51.3	53%	51.6	55%	52.0	55%	52.6	60%
Belgium	Cars/vans	30							38.3	75%
	Cars/vans	50							53.9	60%
Bulgaria	Cars/vans	50								
	all traffic	50								
Cyprus	all traffic	50								
	all traffic	50 on Distributor roads								
Czech Republic	Cars/vans	50								
	all traffic	50								
Denmark	Cars/vans	50					53.5	66%	53.1	64%
	all traffic	50								
Estonia	Cars/vans	50								
	all traffic	50								
Finland	Cars/vans	50								
	all traffic	50								
France	Cars/vans	50	51.7	57%	51.4	54%	51.8	54%	49.9	48%
	all traffic	50								
Germany	Cars/vans	50								
	all traffic	50								
Greece	Cars/vans	50								
	all traffic	50								
Hungary	Cars/vans	50								
	all traffic	50 - 1st class main road								
	all traffic	50 - 2nd class main road								
	all traffic	50 - minor road								
Ireland	Cars/vans	IE Cars/vans 50 Urban Arterial					99.0	69%	86.0	58%
	all traffic	50 Urban National					97.0	66%	98.0	69%
	Cars/vans	50 Urban Residential					61.0	53%	36.0	45%
	average	50 - Average on all urban					67.3	84%	59.5	71%
Israel	Cars/vans	70								
	all traffic	70								
Italy	Cars/vans	50								
	all traffic	50								
Latvia	Cars/vans	50								
	all traffic	50								
Lithuania	Cars/vans	50								
	all traffic	50								
Luxembourg	Cars/vans	50								
	all traffic	50								
Malta	Cars/vans	50								
	all traffic	50								
The Netherlands	Cars/vans	50								
	all traffic	50								
Norway	Cars/vans	50								
	all traffic	50			50.5		50.3		50.2	
Poland	all traffic	50								
	all traffic	60							67.3	71%
Portugal	Cars/vans	50	47.0	41%			48.0	47%		
	all traffic	50								
Romania	Cars/vans	50								
	all traffic	50								
Slovakia	Cars/vans	50								
	all traffic	50								
Slovenia	Cars/vans	50								
	all traffic	50								
Spain	Cars/vans	50								
	all traffic	50								
Sweden	Cars/vans	50	47.8	55%	47.8	55%	47.9	54%	47.6	53%
	all traffic	50	47.7	54%	47.6	55%	47.8	54%	47.5	53%
	Cars/vans	70	62.4	29%	61.8	28%	62.4	31%	63.6	34%
Switzerland	all traffic	70	62.0	29%	61.4	28%	62.0	30%	63.3	33%
	Cars/vans	50								
Great Britain	all traffic	50							43.0	21%
	Cars/vans	48 (30 miles/h)	51.5	66%	51.5	65%	49.9	59%	49.9	58%
	Cars/vans	64 (40 miles/h)	59.6	25%	58.0	25%	59.6	27%	58.0	27%

Mean speed
  Vehicles exceeding the speed limit (%)
  Countries included in Fig. 14a and 14b.



2004		2005		2006		2007		2008		2009	
35.4	78%	35.7	79%	34.4	71%						
50.8	51%	51.1	54%	51.6	55%	52.0	56%	51.0	51%		
35.8	73%	35.4	72%			51.9	96%	51.0	96%		
51.3	50%	50.4	47%	50.5	49%	54.7	66%	55.6	70%		
				48.0							
				55 - 65							
51.0	42%	51.0	58%	43.0	25%	46.0	30%	45.0	18%	41.0	21%
45.0	40%	50.0	57%	41.0	23%	46.0	31%	45.0	19%	41.0	20%
52.8	63%	51.9	59%	51.8	59%	52.2	60%	52.2	61%		
49.3	45%	48.2	43%	47.0	35%	50.7	49%	49.8	45%	49.7	46%
				56,5	63%	51,2	60%	45,6	53%		
55.7	67%			56,1	69%	49,3	54%	46,4	55%		
56.2	66%										
56.9	71%										
		91.0	62%	86.0	60%	40.0	49%	70.0	57%		
		89.0	65%	82.0	75%	86.0	75%	78.0	60%		
		20.0	43%	47.0	51%	23.0	45%	35.0	4%		
60.2	72%	60.8	73%	61.1	86%	56.3	45%	53.9	53%		
										65.0	33%
										65.0	33%
										54.0	60%
										54.0	59%
				57.9	43%						
50.3		51.4		51.8		52.5		52.3		52.1	
64.9	79%	64.4	83%	64.7	84%	64.2	83%	63.1	81%		
45.0	38%										
								57.6	84%	58.2	85%
43.0	19%	43.0	18%	41.0	13%	41.0	12%	42.0	16%	44.0	25%
49.9	53%	48.3	50%	48.3	50%	48.3	49%	48.3	49%		
58.0	27%	58.0	25%	58.0	25%	58.0	23%	58.0	23%		

**Table 13. Mean speed and percentage of vehicles exceeding the speed limits on urban roads.**  
(Chapter 3, Fig. 14a, 14b and 14c)

Source: National statistics provided by the PIN Panelists in each country.

Notes:

Belgium: From 2007, the speed on 30km/h roads is only measured on small 30km/h sections located near schools on through roads and where there is no speed calming infrastructure.

Poland: In 2004, the speed limit in urban areas was lowered from 60km/h to 50km/h between 6am and 11 pm (it remains 60km/h from 11pm to 5am).

Country		Number of speed tickets				Population (1,000)			Yearly checks per 1,000 population		
		2006	2007	2008	2009	2006	2007	2008	2006	2007	2008
Austria	AT	2,700,000	3,800,000	3,800,000		8,266	8,299	8,332	327	458	456
Belgium	BE					10,511	10,585	10,667	n/a	n/a	n/a
Bulgaria	BG	101,337	140,900	152,993		7,719	7,679	7,640	13	18	20
Cyprus	CY	66,642	128,237	108,232	71,852	766	779	789	87	165	137
Czech Republic	CZ	309,392	215,745	180,421	200,079	10,251	10,287	10,381	30	21	17
Denmark	DK	257,571	259,481	248,012		5,427	5,447	5,476	47	48	45
Estonia	EE					1,345	1,342	1,341	n/a	n/a	n/a
Finland	FI	198,643	219,738	263,012	322,997	5,256	5,277	5,300	38	42	50
France	FR	7,238,901	8,097,871	8,863,741		63,400	63,780	64,150	114	127	138
Germany	DE					82,438	82,315	82,218	n/a	n/a	n/a
Greece	EL	373,281	353,133	349,417	330,186	11,125	11,172	11,214	34	32	31
Hungary	HU	174,890	157,244	289,255		10,077	10,066	10,045	17	16	29
Ireland	IE		194,620	177,549	103,861	4,209	4,313	4,401	n/a	45	40
Israel	IL	155,596	155,578	217,206		7,054	7,180	7,310	22	22	30
Italy	IT	1,326,324	1,499,721	1,405,359		58,752	59,131	59,619	23	25	24
Latvia	LV	94,668	101,855	110,479	112,715	2,295	2,281	2,271	41	45	49
Lithuania	LT	61,550	66,243	34,675	n/a	3,403	3,385	3,366	18	20	10
Luxembourg	LU	22,581	23,435	20,240	21,735	469	476	484	48	49	42
Malta	MT					405	408	410	n/a	n/a	n/a
The Netherlands	NL	8,874,080	9,740,861	9,159,301	9,102,868	16,334	16,358	16,405	543	595	558
Norway	NO	241,280	243,412	241,587		4,640	4,681	4,737	52	52	51
Poland	PL	1,079,493	1,209,109	1,300,514		38,157	38,125	38,116	28	32	34
Portugal	PT	92,604			37,637	10,570	10,599	10,618	9	n/a	n/a
Romania	RO			1,089,711	987,388	21,610	21,565	21,529	n/a	n/a	51
Slovakia	SK	132,905	113,951	127,361		5,389	5,394	5,401	25	21	24
Slovenia	SI			144,922		2,003	2,010	2,026	n/a	n/a	72
Spain	ES	733,952	1,196,031	2,002,225		43,758	44,475	45,283	17	27	44
Sweden	SE	185,823	218,939	232,274	242,126	9,048	9,113	9,183	21	24	25
Switzerland	CH	2,614,335	2,514,655			7,459	7,509	7,593	350	335	n/a
UK	UK					58,800	59,200	59,200	n/a	n/a	n/a

**Table 14. Number of speed tickets per 1000 inhabitants (both Police roadside checks and from speed cameras)  
(Chapter 3 - Table 2)**

Source: National statistics provided by the PIN Panelists in each country, completed with Eurostat for population figures

Ireland: 2009 provisional figure

Italy: Polstrada and polizia municipale

Spain: Data not available from Basque Country, Catalonia and urban areas.

Country		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Austria	AT	66	68	91	82	67	56	55	54	52	n/a
Belgium	BE	75	109	88	73	35	38	53	60	54	n/a
Bulgaria	BG	73	52	54	57	43	47	40	44	45	32
Cyprus	CY	9	10	10	8	24	23	15	16	19	15
Czech Republic	CZ	126	112	157	127	68	71	48	41	85	n/a
Denmark	DK	110	115	132	105	106	85	73	112	93	n/a
Estonia	EE	56	74	87	60	59	64	86	97	55	30
Finland	FI	71	82	91	67	84	89	88	91	96	64
France	FR	2,472	2,644	2,319	1,920	1,736	1,532	1,357	1,360	1,211	n/a
Germany	DE	1,022	909	932	817	704	603	599	565	523	n/a
Greece	EL	252	202	149	131	157	177	132	149	116	n/a
Hungary	HU	128	167	191	154	188	164	175	161	111	n/a
Ireland	IE	n/a	n/a	n/a	124	110	118	n/a	n/a	n/a	n/a
Israel	IL	10	10	11	10	23	20	28	33	31	n/a
Italy	IT	103	88	120	144	163	119	156	189	204	n/a
Latvia	LV	125	111	160	119	113	96	84	91	58	36
Lithuania	LT	84	118	91	80	97	106	78	88	55	37
Luxembourg	LU	n/a	4	6	2	7	n/a	n/a	n/a	n/a	n/a
Malta	MT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
The Netherlands	NL	44	29	46	32	29	36	22	28	25	n/a
Norway	NO	n/a	n/a	n/a	n/a	n/a	50	n/a	n/a	n/a	n/a
Poland	PL	644	425	529	463	423	458	390	461	470	n/a
Portugal	PT	50	46	50	49	32	58	51	65	49	n/a
Romania	RO	25	33	13	24	24	192	211	223	267	218
Slovakia	SK	43	50	56	54	41	37	49	30	24	19
Slovenia	SI	120	128	110	96	116	95	125	n/a	77	55
Spain	ES	450	484	466	516	398	395	364	336	273	n/a
Sweden	SE	56	57	63	66	50	47	46	48	37	41
Switzerland	CH	114	107	93	106	103	79	58	55	58	n/a
Great Britain	GB	530	530	550	580	590	550	560	410	430	n/a
EU24 <sup>(1)</sup>		6,644	6,555	5,824	5,347	5,138	4,857	4,820	4,429	n/a	

**Table 15. Road deaths attributed to alcohol**

Source: National statistics provided by the PIN Panelists in each country, using each country's own method of identifying alcohol related-deaths.

See Table 7 national definition of road deaths attributed to alcohol

<sup>(1)</sup> Countries included AT, BE, BG, CY, CZ, DK, EE, FI, FR, DE, EL, HU, IT, LV, LT, NL, PL, PT, RO, SK, SE, SI, ES, GB.

**SafetyNet recommended definition:**

Any death occurring as a result of road accident in which any active participant was found with blood alcohol level above the legal limit.

Country		National definition of deaths attributed to drink driving if different to the SafetyNet recommended definition
Austria	AT	SafetyNet recommended definition. Dead and unconscious persons are however not tested.
Belgium	BE	Driver under the influence of alcohol and drivers who refuse to be tested. Drivers killed on the spot might not be tested.
Bulgaria	BG	SafetyNet recommended definition
Cyprus	CY	SafetyNet recommended definition
Czech Republic	CZ	SafetyNet recommended definition
Denmark	DK	SafetyNet recommended definition
Estonia	EE	Any death occurring as a result of road accident in which any active participant was found with blood alcohol level above the legal limit (including pedestrians, cyclists, etc.)
Finland	FI	SafetyNet recommended definition
France	FR	SafetyNet recommended definition
Germany	DE	SafetyNet recommended definition. Drivers killed on the spot might not be tested.
Greece	EL	Death in accidents where a driver was found with blood alcohol level above the legal limit.
Hungary	HU	Killed drivers at fault under the influence of alcohol.
Ireland	IE	n/a
Israel	IL	SafetyNet recommended definition.
Italy	IT	SafetyNet recommended definition. In practice, it seems however that deaths are often attributed to drink driving only when alcohol is considered by the Police officer to be the unique contributory factor of the fatal accident.
Latvia	LV	Deaths occurring as a result of road accident in which at least one driver (excluding cyclists and riders of mopeds) was found with blood alcohol level above the legal limit (0.2 g/l for novice drivers, 0.5g/l for all other drivers)
Lithuania	LT	Drunk drivers, who did not have the right to drive, excluded.
Luxembourg	LU	n/a
Malta	MT	n/a
The Netherlands	NL	Drivers killed on the spot might not be tested.
Norway	NO	n/a
Poland	PL	SafetyNet recommended definition
Portugal	PT	SafetyNet recommended definition
Romania	RO	With blood or breath alcohol level above the legal limit.
Slovakia	SK	Fatal accident where alcohol was indicated with guilty traffic participant
Slovenia	SI	SafetyNet recommended definition
Spain	ES	Killed car drivers who tested positive in post-mortem blood alcohol tests.
Sweden	SE	Killed car drivers who tested positive in post-mortem blood alcohol tests.
Switzerland	CH	People tested for alcohol. Testing might only occur when the Police suspects the presence of alcohol.
Great Britain	GB	People killed in a drink drive accident where one or more of the motor vehicle drivers or riders involved either refused to give a breath test specimen when requested to do so by the police (other than when incapable of doing so for medical reasons), or one of the following: a) failed a roadside breath test by registering over 0.35 g/l of alcohol in their breath. b) died and was subsequently found to have more than 0.8 g/l of alcohol in their blood.

**Table 16. National definition of deaths attributed to drink driving**

Source: definition provided by the PIN Panelists in each country.

Country		Total number of alcohol roadside police checks			Among them, number of positive alcohol roadside police checks (with BAC above the legal BAC limit)			Population (1,000)			2006	2007	2008			
		2006	2007	2008	2006	2007	2008	2006	2007	2008	Roadside police tests per 1,000 population % above legal limit		Roadside police tests per 1,000 population % above legal limit		Roadside police tests per 1,000 population % above legal limit	
Austria	AT	465,460	637,386	724,488	43,539	44,608	42,281	8,266	8,299	8,332	56	9.4	77	7.0	87	5.8
Belgium	BE	n/a	n/a	n/a	n/a	n/a	n/a	10,511	10,585	10,667						
Bulgaria	BG	n/a	n/a	n/a	28,220	23,234	22,835	7,719	7,679	7,640						
Cyprus	CY	68,874	116,184	143,848	4,249	7,916	8,490	766	779	789	90	6.2	149	6.8	182	5.9
Czech Republic	CZ	n/a	n/a	n/a	8,603	7,598	8,178	10,251	10,287	10,381						
Denmark	DK	n/a	n/a	195,000	n/a	n/a		5,427	5,447	5,476	n/a	n/a	n/a	n/a	36	n/a
Estonia	EE	102,710	91,639	126,784	937	925	1,384	1,345	1,342	1,341	76	0.9	68	1.0	95	1.1
Finland	FI	n/a	1,676,544	2,040,243	25,765	27,544	25,819	5,256	5,277	5,300	n/a	n/a	318	1.6	385	1.3
France	FR	11,352,294	11,230,014	11,743,065	365,848	376,124	381,705	61,167	61,538	61,876	186	3.2	182	3.3	190	3.3
Germany	DE	n/a	n/a	n/a	n/a	n/a	n/a	82,438	82,315	82,218						
Greece	EL	1,317,268	1,596,036	1,509,092	44,848	46,378	47,257	11,125	11,172	11,214	118	3.4	143	2.9	135	3.1
Hungary	HU	1,451,433	1,437,874	1,301,127	42,463	45,682	40,721	10,077	10,066	10,045	144	2.9	143	3.2	130	3.1
Ireland	IE		489,029	563,115		19,858	18,028	4,209	4,313	4,401	n/a	n/a	113	4.1	128	3.2
Israel	IL	29,900	175,000	500,000				7,280	7,282	7,290	4	17	24	5	69	2.2
Italy*	IT	250,000	700,000	1,400,000				58,752	59,131	59,619	4	n/a	12	n/a	23	n/a
Latvia	LV	n/a	n/a	n/a	4,419	6,724	6,801	2,295	2,281	2,271						
Lithuania	LT	105,514	114,144	134,026	1,445	1,770	2,305	3,403	3,385	3,366	31	1.4	34	1.6	40	1.7
Luxembourg	LU	156	193	206				469	476	484	0.3	n/a	0.4	n/a	0.4	n/a
Malta	MT	n/a	n/a	n/a				405	408	410						
The Netherlands	NL	n/a	n/a	n/a				16,334	16,358	16,405						
Norway	NO	n/a	n/a	1,600,000				4,640	4,681	4,737					338	n/a
Poland	PL	n/a	n/a	1,775,186	201,192	159,346	168,612	38,157	38,125	38,116					47	9.5
Portugal	PT	503,900	590,549	670,354	37,011	32,956	39,802	10,570	10,599	10,618	48	7.3	56	5.6	63	5.9
Romania	RO	n/a	n/a	n/a				21,610	21,565	21,529						
Slovakia	SK	n/a	n/a	n/a	4,142	4,489	4,604	5,389	5,394	5,401						
Slovenia	SI	323,649	384,591	405,975	25,883	27,934	23,745	2,003	2,010	2,026	162	8.0	191	7.3	200	5.8
Spain	ES	3,835,437	4,273,488	5,087,873	94,683	92,449	93,979	43,758	44,475	45,283	88	2.5	96	2.2	112	1.8
Sweden	SE	2,390,998	2,664,812	2,639,588	21,812	22,095	22,216	9,048	9,113	9,183	264	0.9	292	0.8	287	0.8
Switzerland	CH	n/a	n/a	n/a												
Great Britain	GB	602,000	600,000	n/a	105,000	98,000		58,800	59,200	59,200	10	17.4	10	16.3	n/a	n/a

**Table 17. Roadside alcohol breath tests (per 1,000 inhabitants) and percentage of those tested found to be above the legal limit.**  
(Chapter 3 - Fig. 18)

Source: National statistics provided by the PIN Panelists in each country, completed with Eurostat for population figures.

Italy: Data from Traffic police forces and Carabinieri (data from local police forces are not included)

Spain: Data not available from Basque Country, Catalonia and urban areas.

Country	code	2001	2002	2003	2004	2005	2006	2007	2008	2009
Austria	AT	72	75	77	77	83	89	89	87	n/a
Belgium	BE	n/a	n/a	n/a	n/a	67	75	79	80	n/a
Bulgaria	BG	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cyprus	CY	n/a	81	81	n/a	80	n/a	80	n/a	80
Czech Republic	CZ	59	59	63	66	71	90	88	88	89
Denmark	DK	82	n/a	82	n/a	87	91	90	92	92
Estonia	EE	63	64	72	70	74	72	90	96	87
Finland	FI	85	86	86	88	88	90	89	88	92
France	FR	93	92	95	97	97	97	98	98	n/a
Germany	D	95	93	94	94	96	97	95	97	n/a
Greece	EL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	77	75
Hungary	HU	54	52	59	59	65	n.a.	71	71	79
Ireland	IE	n/a	72	84	n/a	86	86	88	90	n/a
Israel	IL	n/a	n/a	87	n/a	87	87	91	90	94
Italy	IT	n/a	30	83	n/a	71	71	65	n/a	n/a
Latvia	LV	n/a	n/a	n/a	n/a	n/a	77	77	83	n/a
Lithuania	LT	n/a	n/a	n/a	n/a	n/a	44	n/a	n/a	n/a
Luxembourg	LU	n/a	n/a	81	n/a	n/a	n/a	n/a	n/a	n/a
Malta	MT	n/a	n/a	n/a	97	n/a	96	n/a	n/a	n/a
The Netherlands*	NL	n/a	89	87	91	92	94	92	95	n/a
Norway	NO	92	90	92	89	90	91	n/a	92	n/a
Poland	PL	n/a	71	72	69	76	77	77	80	n/a
Portugal	PT	n/a	n/a	n/a	n/a	n/a	86	n/a	n/a	n/a
Romania	RO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slovakia	SK	n/a	n/a	n/a	n/a	n/a	n/a	n/a	71	80
Slovenia	SI	n/a	n/a	n/a	n/a	n/a	86	82	88	n/a
Spain	ES	n/a	63	71	n/a	74	85	89	85	n/a
Sweden*	SE	90	91	92	92	92	94	96	95	96
Switzerland	CH	n/a	n/a	n/a	n/a	n/a	86	86	88	87
UK	UK	88	88	88	90	90	90	91	95	95

**Table 18. Seat belts wearing rates on front seats (in %)**  
(Chapter 3 - Fig. 19)

*Source: National data provided by PIN panelists in each country. Daytime seat belt wearing rates on front seats aggregated of cars and vans from road side independent survey.*

*\*The Netherlands: The rate does not include vans, only passengers cars.*

*\*Sweden: Adults only*

Country	code	2001	2002	2003	2004	2005	2006	2007	2008	2009
Austria	AT	43	62	58	56	52	58	49	65	n/a
Belgium	BE	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Bulgaria	BG	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Cyprus	CY	n/a	n/a	n/a	n/a	n/a	n/a	9	n/a	21
Czech Republic	CZ	n/a	n/a	n/a	n/a	34	58	54	56	51
Denmark	DK	54	n/a	64	n/a	63	71	70	79	71
Estonia	EE	14	22	22	20	28	30	68	67	63
Finland*	FI	75	74	76	77	78	82	80	82	87
France	FR	n/a	n/a	n/a	n/a	77	82	n/a	n/a	n/a
Germany	D	85	86	86	90	89	92	88	n/a	n/a
Greece	EL	n/a	n/a	n/a	n/a	n/a	n/a	n/a	21	23
Hungary	HU	14	17	20	n/a	30	n.a.	40	42	49
Ireland	IE	n/a	n/a	46	n/a	46	63	84	78	n/a
Israel	IL	n/a	n/a	23	n/a	25	26	45	56	63
Italy	IT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Latvia	LV	n/a	n/a	n/a	n/a	n/a	32	21	n/a	n/a
Lithuania	LT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Luxembourg	LU	n/a	n/a	72	n/a	n/a	n/a	n/a	n/a	n/a
Malta	MT	n/a	n/a	n/a	43	n/a	28	n/a	n/a	n/a
The Netherlands*	NL	n/a	52	63	69	64	73	65	81	n/a
Norway	NO	84	85	85	85	85	n/a	n/a	n/a	n/a
Poland*	PL	n/a	56	45	44	43	47	48	50	n/a
Portugal	PT	n/a	n/a	n/a	n/a	n/a	45	49	n/a	n/a
Romania	RO	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Slovakia	SK	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	33
Slovenia	SI	n/a	n/a	n/a	n/a	n/a	30	n/a	57	n/a
Spain	ES	n/a	36	38	n/a	51	64	69	81	n/a
Sweden*	SE	75	75	74	79	73	74	80	74	80
Switzerland	CH	32	55	57	56	53	68	65	65	68
UK	UK	77	78	79	83	84	85	84	88	89

**Table 19. Seat belts wearing rates on rear seats (in %)**  
(Chapter 3 - Fig. 20)

Source: National statistics provided by PIN Panelists in each country. Daytime wearing rates of seat belts on rear seats of cars and vans from road side independent survey.

\*Finland and Poland: Urban areas only

\*The Netherlands: The rate does not include vans, only passengers cars.

\* Sweden: Adults only

# NOTES



# NOTES

# NOTES



ISBN-NUMBER : 97899081467520

## European Transport Safety Council

Avenue des Celtes 20 - 1040 Brussels  
tel: +32 2 230 41 06  
fax: +32 2 230 42 15  
e-mail: [information@etsc.eu](mailto:information@etsc.eu)  
website: [www.etsc.eu](http://www.etsc.eu)

