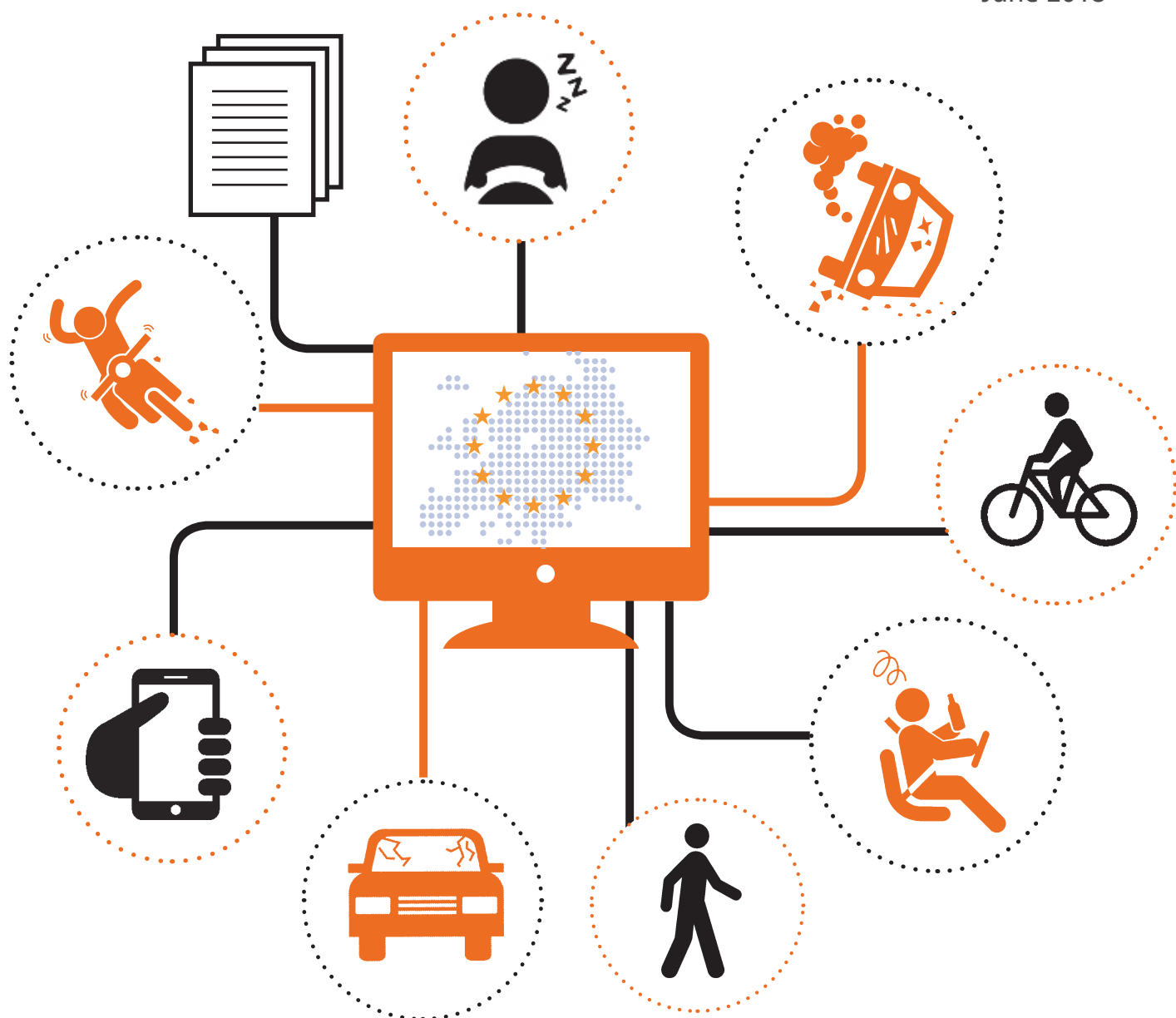


# AN OVERVIEW OF ROAD DEATH DATA COLLECTION IN THE EU

PIN Flash Report 35

June 2018



European Transport Safety Council

25 YEARS 1993-2018



## PIN Panel

Austria (AT)	Klaus Machata, Road Safety Board (KFV)
Belgium (BE)	Wouter Van den Berghe, VIAS institute
Bulgaria (BG)	Aleksi Kesyakov, State-Public Consultative Commission on Road Safety
Croatia (HR)	Sanja Veić, Ministry of Interior
Czech Republic (CZ)	Jiří Ambros, Jindřich Frič, Transport Research Centre (CDV)
Cyprus (CY)	George Morfakis, Road Safety Expert, Irene Manoli, Ministry of Transport, Communications and Works
Denmark (DK)	Jesper Sølund, Danish Road Safety Council
Estonia (EE)	Erik Ernits, Road Administration
Finland (FI)	Esa Rätty, Finnish Crash Data Institute (OTI)
France (FR)	Camille Painblanc, Manuelle Salathé, National Interministerial Road Safety Observatory
Germany (DE)	Jacqueline Lacroix, German Road Safety Council (DVR)
Greece (EL)	George Yannis, Technical University of Athens
Hungary (HU)	Peter Holló, Institute for Transport Sciences (KTI)
Ireland (IE)	Deirde Lynch, Sharon Heffernan, Velma Burns, Road Safety Authority
Israel (IL)	Shalom Hakkert, Transportation Research Institute- Technion, Victoria Gitelman, Road Safety Research Center - Technion
Italy (IT)	Valentino Iurato, Ministry of Transport
Latvia (LV)	Aldis Lāma, Road Traffic Safety Directorate
Lithuania (LT)	Vidmantas Pumputis, Ministry of Transport
Luxembourg (LU)	Claude Paquet, Ministry for Sustainable Development and Infrastructure
Malta (MT)	David Sutton, Transport Malta
Netherlands (NL)	Peter Mak, Ministry of Transport
Norway (NO)	Michael Sørensen, 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)	Florentin Brăcea, Romanian Traffic Police
Serbia (RS)	Jovica Vasiljević, Road Traffic Safety Agency
Slovakia (SK)	Petra Groschová, Ministry of Transport
Slovenia (SI)	Vesna Marinko, Traffic Safety Agency
Spain (ES)	Pilar Zori, Ministry of Interior
Sweden (SE)	Anna Vadeby, National Road and Transport Research Institute (VTI)
Switzerland (CH)	Yvonne Achermann, Swiss Council for Accident Prevention (bfu)
U.K. (GB)	Delphine Robineau, Department for Transport Brian Lawton, Transport Research Laboratory (TRL)

## PIN Observers

Stelios Efstathiadis, Road Safety Institute Panos Mylonas, Greece  
Lucia Pennisi, Automobile Club d'Italia (ACI), Italy

## PIN Steering Group

Henk Stipdonk, Institute for Road Safety Research (SWOV) (PIN Co-chair)  
Heather Ward, Parliamentary Advisory Council for Transport Safety (PACTS) (PIN Co-chair)  
Richard Allsop, ETSC Board of Directors (PIN Advisor)  
Jacqueline Lacroix, the German Road Safety Council (DVR)  
Vincent Legagneur, Toyota Motor Europe  
Anders Lie, Swedish Transport Administration  
Astrid Linder, Swedish National Road and Transport Research Institute (VTI)  
Karl Pihl, Volvo group  
Guro Ranes, Norwegian Public Roads Administration  
Maria Teresa Sanz-Villegas, European Commission  
Pete Thomas, Loughborough University  
George Yannis, Technical University of Athens  
Antonio Avenoso, ETSC  
Graziella Jost, ETSC  
Dovile Adminaite, ETSC

## For more information

European Transport Safety Council  
20 Avenue des Celtes  
B-1040 Brussels  
Tel: +32 2 230 4106  
dovile.adminaite@etsc.eu  
[www.etsc.eu/pin](http://www.etsc.eu/pin)

The Road Safety Performance Index (PIN) Programme receives financial support from Toyota Motor Europe, Volvo Group, the Swedish Transport Administration, the German Road Safety Council and the Norwegian Public Roads Administration.

The contents of this publication are the sole responsibility of ETSC and do not necessarily represent the views of the sponsors or the organisations to which the PIN panel and steering group members belong.

© 2018 European Transport Safety Council

# **AN OVERVIEW OF ROAD DEATH DATA COLLECTION IN THE EU**

## **PIN Flash Report 35**

### **Authors**

Dovile Adminaite

Graziella Jost

Henk Stipdonk

Heather Ward

June 2018

## **ACKNOWLEDGEMENTS**

For their assistance providing data, background information and expertise, the authors are grateful to members of the PIN Panel and Steering Group. Without their contribution, this report would not have been possible. Special thanks go to the co-chairs of the PIN programme, Henk Stipdonk and Heather Ward and the PIN programme advisor, Professor Richard Allsop.

The PIN programme relies on panellists in the participating countries to provide data for their countries and to carry out quality assurance of the figures provided. This forms the basis for the PIN Flash reports and other PIN publications. In addition, all PIN panellists are involved in the review process of the reports to ensure the accuracy and reliability of the findings.

ETSC is grateful for the financial support for the PIN programme provided by Toyota Motor Europe, Volvo Group, the Swedish Transport Administration, the German Road Safety Council and the Norwegian Public Roads Administration.

## **ABOUT THE EUROPEAN TRANSPORT SAFETY COUNCIL (ETSC)**

ETSC is a Brussels-based independent non-profit organisation dedicated to reducing the numbers of deaths and injuries in transport in Europe. Founded in 1993, ETSC provides an impartial source of expert advice on transport safety matters to the European Commission, the European Parliament and Member States. It maintains its independence through funding from a variety of sources including membership subscriptions, the European Commission, and public and private sector support.

## **ABOUT THE ROAD SAFETY PERFORMANCE INDEX PROJECT**

ETSC's Road Safety Performance Index (PIN) programme was set up in 2006 as a response to the first road safety target set by the European Union to halve road deaths between 2001 and 2010. In 2010, the European Union renewed its commitment to reduce road deaths by 50% by 2020, compared to 2010 levels.

By comparing Member State performance, the PIN serves to identify and promote best practice and inspire the kind of political leadership needed to deliver a road transport system that is as safe as possible.

The PIN covers all relevant areas of road safety including road user behaviour, infrastructure and vehicles, as well as road safety policymaking. Each year ETSC publishes PIN Flash reports on specific areas of road safety. A list of topics covered by the PIN programme can be found on <http://etsc.eu/projects/pin/>.

An Overview of Road Death Data Collection in the EU is the 35<sup>th</sup> PIN Flash report. The report covers 32 countries: the 28 Member States of the European Union together with Israel, Norway, the Republic of Serbia and Switzerland.

# CONTENTS

<b>Executive summary</b>	<b>6</b>
Main recommendations to Member States	7
Main recommendations to the EU	8
<b>Introduction</b>	<b>9</b>
<b>PART I Road death data collection</b>	<b>10</b>
1.1 Police reports - an essential source for road death data collection	10
1.2 Some road deaths might go unrecorded by the police	11
1.3 Accuracy of road death data recorded by the police	12
1.4 Procedures to complement road death data recorded by the police	14
1.5 Improving knowledge: access for researchers to road collision databases; in-depth accident investigations; event data recorders	21
1.5.1 Access for researchers to road collision databases	21
1.5.2 In-depth accident investigations	22
1.5.3 Event data recorders	22
1.6 Road death data comparisons in the EU - road accident database (CARE) and CaDaS glossary	23
<b>PART II Data recorded: killed at the site vs 30 days, alcohol and drug-related road deaths, use of mobile devices, natural deaths and suicides</b>	<b>24</b>
2.1 More than half of all killed road users die at the site of a collision	24
2.2 Alcohol-related road death data collection	25
2.3 Drug-driving related road death data collection	28
2.4 Use of mobile devices as a contributory factor in a road collision	30
2.5 Natural deaths and suicides in road traffic	31
<b>Annexes</b>	<b>34</b>
A list of questions addressed to the PIN national experts	

# EXECUTIVE SUMMARY

The goal of this PIN flash report is to gather information on road death data collection in different PIN countries and to find out if and how countries cross-check or complement road death data recorded by the police with alternative sources. The aim is to provide information to exchange good practice on how to improve road death data collection and recording.

In all PIN countries the primary source of road death data collection consists of police records. Police data are, and should remain, the primary source of road death analysis. However, police resources are limited and increasingly under pressure from other tasks. There are also certain collision scenarios such as those involving non-motorised vehicles or single vehicle collisions where road deaths are more likely to go unrecorded by the police.

The actual number of road deaths can be determined even when not all road deaths are recorded by the police. This can be done by using complementary data sources that may be made available by national statistical offices.<sup>1</sup> Fifteen PIN countries rely on police data only for road death data registration.<sup>2</sup> Seventeen PIN countries link police data with other sources.<sup>3</sup> The most widely used additional data sources are hospital data, death certificates and records of unnatural death.

In general, police records provide an important overview of road death data. However, procedures complementing and linking police data with other sources should be applied in all PIN countries in order to detect changes in recording rates by the police and to verify the completeness of road death data recorded by the police. In addition, linking police and hospital records is essential for improving serious road traffic injury data collection. By improving the reporting rate of serious injuries, the reporting rate for the number of road deaths is likely to improve as well, as people who were first recorded as injured may, sadly, later die within 30 days.<sup>4</sup>

Experts from the great majority of the PIN countries consider that road death data collected in their countries by the police are accurate, even when procedures complementing police data are not in place. Yet some experts agree that certain road deaths might go unrecorded by the police in particular those following single bicycle collisions or bicycle collisions with pedestrians. As active travel is being encouraged, the number of collisions involving vulnerable road users might be increasing.

Among countries that assessed road death data recording rates by the police, Greece, Poland and the Netherlands were the countries that reported the biggest discrepancies between the number of road deaths recorded by the police and the actual number of road deaths. Comparison of police and hospital data in Greece over the period 1985-2015 revealed that the number of road deaths recorded by hospitals is 15% to 25% higher than the number of road deaths recorded by the police. A pilot study conducted in Poland revealed that, based on the most moderate estimations, at least 5% of all road deaths in 2009 were not recorded by the police. The national statistical office in the Netherlands calculated that around 15% of all road deaths in 2016 were not recorded by the police and the number of road deaths

<sup>1</sup> Derriks, H.M. and Mak, P.M., IRTAD (2007), Underreporting of Road Traffic Casualties, <https://goo.gl/VbfTTo>

<sup>2</sup> Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Ireland, Latvia, Lithuania, Portugal, Poland, Slovenia, Slovakia and Serbia

<sup>3</sup> Austria, Belgium, Cyprus, Denmark, Germany, Finland, France, Italy, Luxembourg, Malta, the Netherlands, Romania, Spain, Sweden, Switzerland, UK and Israel.

<sup>4</sup> The EU definition of a road death: any person killed immediately or dying within 30 days as a result of a road collision.

*The absence of procedures to link and complement road death data reported by the police deprive some countries of a monitoring tool for the quality of official road death data reporting.*

not recorded by the police has been increasing over the years.

Some other countries might be affected by road death data underreporting by the police. The absence of procedures to link and complement road death data recorded by the police deprive these countries of a monitoring tool for the quality of official road death data reporting.

Countries that complement police data with alternative sources have different approaches. For example Sweden has a unique road death and injury information exchange system (STRADA) which facilitates information exchange between the police and hospitals under one platform, and a responsible authority – the Swedish Transport Agency – manages the database. In some countries, for instance Belgium, Finland, Germany and the Netherlands the National statistical offices and in Spain the Directorate General for Traffic, and not the police, are responsible for capturing the number of road traffic victims who died within 30 days by complementing police data with alternative sources.

This report also shows that, in the countries which could provide data, more than half of killed road users are recorded as dying at the site of a collision. But there are large differences between countries and there might be many possible reasons for this, including differences in recording procedures or quality of the emergency services and hospital care. A high proportion of road deaths at the site might also indicate lower reporting rates of deaths at a later date as underreporting can be related to deaths that occur later after a collision. These differences are difficult to interpret and should be further researched.

Official alcohol-related road death numbers based on police records are underreported in a number of PIN countries as not all drivers, let alone all active road users, involved in fatal collisions are systematically tested for alcohol.

Drug-driving remains significantly less well understood than drink-driving. Some PIN countries already have legislation in place to allow the police to drug-test road users. Yet the scope of drug-driving deaths remains unknown as not all drivers or riders involved in fatal collisions are tested for drugs.

Another grey zone in road safety is road collisions related to (illegal) use of mobile devices. Data on the use of mobile devices at the time of a collision are not systematically collected or registered in the police database.

### **Main recommendations to Member States**

- Countries that have not yet estimated what proportion of road deaths are reported by the police should conduct a study to estimate it. This can be done by comparing individual police road death data records with other independent sources, such as death certificates, records of unnatural deaths and hospital data to identify the actual number of road deaths.
- If such a study shows that road deaths are missing from the police records, Member States should establish procedures to complement road death data recorded by the police with other sources, such as death certificates, records of unnatural deaths and hospital data. Use these procedures to detect changes in recording rates by the police over time, identify the missing cases and their characteristics and act upon improving the data completeness.
- Improve data linkages between police, health and justice institutions concerning collisions involving injured road users.
- Consider establishing one platform for recording road traffic victims by the police, hospitals and other professionals dealing with them.

- Dedicate necessary financial and human resources to the police and require them to attend, register and follow-up all fatal and serious road traffic collisions.
- Introduce obligatory testing for alcohol of all active road users in all collisions resulting in road deaths or injuries and collect data systematically.
- Test all road users for drug use as a minimum when there is a reason to suspect drug consumption.
- Introduce procedures which allow police to verify whether a mobile phone was used at a time of a fatal collision by establishing information exchange between the police and mobile network providers.

### **Main recommendations to EU institutions**

- Within the context of the revision of Regulation 2009/661 concerning Type-Approval Requirements for the General Safety of Motor Vehicles<sup>5</sup>, mandate Event Data Recorders in all new vehicles and require the data to be made available for accident investigation.
- Adopt the SafetyNet recommended definition of a drink-driving death and update the CaDaS guidelines accordingly, whilst recognising that it differs among countries and does not include all alcohol-related road deaths.
- Standardise drug-driving monitoring methods by establishing a common framework for Member States to use.

---

<sup>5</sup> European Commission (17.05.2018), Proposal for a Regulation of the European Parliament and of the Council on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/... and repealing Regulation (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009, <https://goo.gl/oVfLBP>



# INTRODUCTION

In 2010, the European Union renewed its commitment to improve road safety by setting a target of reducing road deaths by 50% by 2020, compared to 2010 levels. This target followed an earlier target set in 2001 to halve road deaths by 2010. The numbers of people killed are used to compare road mortality levels and progress in road safety between the EU countries.

The goal of this PIN flash report is to gather information on road death data collection in different PIN countries and to find out if and how countries cross-check or complement road death data recorded by the police with alternative sources.

It is not easy to capture and report all road deaths, especially those in collisions where no motorised vehicles are involved or in some single vehicle collisions. This report aims to gather information on whether PIN countries complement road death data recorded by the police with alternative data sources and to exchange good practice on how to improve data collection and recording of severe and fatal road collisions.

Accurate road casualty data are important for understanding trends in road collision rates and collision risks, also when making international comparisons. Recording practices vary from country to country and a change in the number of road deaths might be partially related to a change in data recording. A more comprehensive picture of the actual road safety situation contributes to allocation of appropriate resources and measures to be implemented and targeting different high risk areas, such as specific road user groups or road types.<sup>6</sup>

Part I of this report describes the main sources of road death data collection, whether PIN countries apply data linkage or complementing procedures for the numbers of road deaths recorded by the police and, if such procedures are in place, how they work. Practices of countries that have thorough road death data linkage and complementing procedures are highlighted in the report and they could be an inspiration to other countries.

Part II looks at what data are recorded, including the proportion of road users killed at the site of a collision and within 30 days, procedures of alcohol and drug-related road death recording, use of mobile devices at a time of a collision and natural deaths and suicides in road traffic.

## Note on methodology

The goal of this PIN flash report is to gather information on road death data collection in different PIN countries and to find out whether and how countries cross-check or complement road death data recorded by the police with alternative sources. The aim is to provide information and exchange good practice on how to improve road death data collection and recording.

The national experts, the PIN panellists from 32 participating countries, were asked to answer a set of qualitative questions which constitute a checklist of the main elements in road death data collection procedures (see the annex). The list of questions is not exhaustive. The questionnaire was circulated at the beginning of 2018. The filled-in questionnaires were received from all 32 PIN countries.

Many items in the list are open questions which do not have simple yes/no answers. Answers to such questions are based on the expertise and knowledge of the panellists and their professional sources.

<sup>6</sup> Derriks, H.M. and Mak, P.M, ITF-OECD IRTAD (2007), Underreporting of Road Traffic Casualties, <https://goo.gl/VbfTT0>

# PART I

# ROAD DEATH

# DATA COLLECTION

## 1.1 Police reports - an essential source for road death data collection

In all PIN countries the primary source on the number of road deaths consists of police records. The police record initial road collision data and update the records as details of the investigation become available. Presence at the collision scene allows the police officers to collect detailed information about the characteristics of the collision and record relevant information. The police might also receive additional information from witnesses or hospitals about the collision after its occurrence.

In 22 PIN countries - Bulgaria, Belgium, Cyprus, Croatia, Czech Republic, Denmark, Greece, Hungary, Ireland, Luxembourg, Latvia, Lithuania, Malta, Poland, Romania, Slovenia, Slovakia, Switzerland, Israel, Norway, Serbia and Spain - the police are required to attend all collisions resulting in injuries. There is no such requirement in, for instance, the Netherlands and the UK.<sup>7,8</sup>

All PIN countries collect road death data according to the common EU definition - "any person killed immediately or dying within 30 days as a result of a road collision"<sup>9</sup>. In cases when a person is admitted to a hospital due to road traffic injuries, depending on the country, one of the procedures below should follow to comply with the 30 days definition:

- A police officer verifies with the hospital whether a person injured in a road collision died within 30 days (e.g. Bulgaria, Israel<sup>10</sup>, Italy);
- A hospital or other health authority inform the police in cases where a person injured in a road traffic collision died within 30 days (e.g. Estonia, Croatia, Czech Republic, Latvia, Serbia, Portugal);
- A combination of both – police might follow up on the victim, but the hospitals might inform the police first if a road traffic victim died within 30 days (e.g. Cyprus, Greece, Hungary, Ireland, Lithuania, Malta, Poland, Slovenia, Sweden<sup>11</sup>, Switzerland and the UK);
- Police and hospitals are not required to exchange information on road deaths. A responsible authority - the National Statistical office in Belgium, Finland, Germany and the Netherlands and the Directorate General for Traffic in the case of Spain - determines the actual number of road deaths that occurred within 30 days after a collision based on data from different sources

For bullet points two and three the hospitals are obliged or can provide information on a voluntary basis to notify the police about a death resulting from a road collision.

<sup>7</sup> In the UK, any collision which results in injury or damage should be reported to the police within 24 hours, if not reported at the scene itself. The police in the UK attend many serious collisions including most – if not all – fatal collisions.

<sup>8</sup> For the other eight PIN countries the information on whether the police are obliged to attend the scene of a collision is not available in this report.

<sup>9</sup> Confirmed suicides and natural deaths are not included, Directorate General for Mobility and Transport (2015), CARE database, CaDaS, <https://goo.gl/7CSxiW>

<sup>10</sup> The police verifies with the hospital until 30 days, the national statistical office also double-checks police data.

<sup>11</sup> In addition to police and hospital data exchange, the Swedish Transport Agency, which is responsible for STRADA, also checks population registry data to verify if an injured person died within 30 days.

In these countries, if the police were not at the scene of a collision, they might receive the information about a road death from the hospital or another health authority. However, there are indications that in some countries the procedure for hospitals to notify the police might not always be followed. There might also be cases when a road injury was not registered as such (e.g. a patient did not mention to the doctor he/she was injured in a road collision or a death of a person was not suspected to be related to a road collision). Moreover, both police and hospitals have limited resources and are under pressure from other tasks, therefore, some data registration errors or miscommunication might occur.

### Recommendation to Member States

- Dedicate necessary financial and human resources to the police and require them to attend, register and follow-up all fatal and serious road traffic collisions.



### Poland: procedures for notifying the police of a road traffic collision

Participants or witnesses of a road collision are legally obliged to notify the police and emergency services, by calling an emergency service number. The emergency service operator provides information to all necessary services who are obliged to reach the scene of a collision in the shortest possible time. The police patrol is usually the first to arrive at the scene. Their task is to secure the scene and to collect basic data about the persons involved and about the witnesses. Police officers from the accident unit also attend the scene to collect detailed information. The procedure for collecting data is specified in the regulations. If there is an ambulance at the scene of the collision, the police collect the initial information about the injuries of the victims. These data are verified on the same day when the police officer goes to the hospital to perform sobriety tests or ensure a blood sample was taken for testing. The initial data concerning the road collision are entered into the database within three days of the date of the incident and then supplemented and modified within the next month.

## 1.2 Some road deaths might go unrecorded by the police

When there has been a fatal road collision or one which is very serious and might result in a death, one of five common example scenarios can occur, but the list below is not exhaustive:

1. The police, ambulance and rescue services are called to the scene, an on-site investigation is made and relevant information is recorded as the victim died at the scene;
2. The police, ambulance and rescue services are called, the victim is transported to the hospital, an on-site investigation is usually undertaken and the report is made. If the victim dies on the way to the hospital, on arrival, later the same day or at a later date but within 30 days in the hospital, at home or somewhere else, the police should update the information in the report. In some cases, a communication problem between the ambulance personnel, the emergency care department or other departments of the hospital and the police might occur. In this scenario the completeness of road death data will depend on how well information exchange procedures between the police, hospitals or coroners are established;
3. After a collision, by-standers or people involved in the collision call for an ambulance, but nobody calls the police and the collision is not registered in the police database. The absence of the police is especially likely in the case of single vehicle collisions with seemingly moderate injury and uninsured/unlicensed vehicles, or when collisions do not involve motorised vehicles (e.g. single bicycle, bicycle to pedestrian or bicycle to bicycle);

4. In a collision where the police are called, one of the victims (perhaps a passenger) is seemingly unharmed and either the collision is not reported at all, or it is, but the details of this victim (e.g. age, injury) are not recorded. The victim goes home and dies from an unnoticed but serious injury;
5. After a collision, road users may be seemingly unharmed, neither the police nor an ambulance are called. Yet a victim dies within 30 days because of complications and eventually fatal injuries.

In scenarios three, four and five, there is no record of a road death in police files, the police investigation does not take place and road deaths go unrecorded by the police. Therefore, in such cases alternative data sources are crucial to inform and complement police records. In case 5, it may be extremely difficult to establish that a road death occurred.

### 1.3 Accuracy of road death data recorded by the police

Experts from the great majority of the PIN countries consider that the road death data collected and recorded by the police are accurate, even when police data are not linked to or complemented by other sources. Several PIN experts do not rule out the possibility that some road deaths might go unrecorded by the police. But it is believed that the number of such cases is low (1%-2%) and, therefore, does not have a significant impact on the overall numbers of road deaths. Several PIN panellists thought that some road deaths in their country might go unrecorded by the police, in particular following single bicycle collisions or bicycle collisions with pedestrians. This was considered to be an issue particularly in collisions involving elderly road users, as they have a higher risk of dying in hospital later and with seemingly minor road traffic injuries that turn out to be fatal or in cases where a deceased person is found at a roadside and determination of the cause of death is problematic.

Among countries that assessed road death data recording rates by the police, Greece, Poland and the Netherlands were the countries that reported the biggest discrepancies between the number of road deaths recorded by the police and the actual number of road deaths. Such discrepancies may be more prevalent than hitherto assumed and other countries might be affected but the absence of procedures to link and complement data deprive them of a monitoring tool for the quality of police road death data reporting.

Comparison of police and hospital data in Greece over the period 1985-2015 revealed that the number of road deaths recorded by hospitals is 15% to 25% higher than the number of road deaths recorded by the police.<sup>12</sup> Hospital records also include deaths that happened more than 30 days after a collision. It is not known what proportion this represents but this should be borne in mind when assessing the scale of unreported road deaths.

In the Netherlands, the number of road deaths not reported by the police has been increasing over the years. In 2016, around 15% of all road deaths were not recorded by the police compared to around 7% over the period 1996-2000.<sup>13</sup>

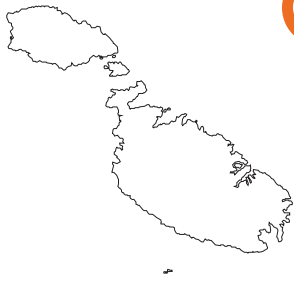
A pilot study conducted in Poland by the Motor Transport Institute (ITS) compared the number of road deaths recorded by the police with death certificates. The results revealed that, based on the most moderate estimations, at least 5% of all road deaths in 2009 were not recorded by the police.<sup>14</sup>

---

<sup>12</sup>Source: PIN Panellist

<sup>13</sup>Source: SWOV

<sup>14</sup>Source: PIN Panellist



**Malta: it is likely that 100% of fatal and serious injury traffic collision scenes are attended by the police**

In Malta, the police are the first response to road collisions, with all 112 calls received through a centralised unit. There is an established communication between the police, the Ambulance Control Unit and Civil Protection Department, who coordinate with each other for road traffic callouts.

*"Malta is a relatively small country, serviced by one main general public hospital. Although there are many other facilities on the island providing specialist treatment, the main hospital is best-equipped to offer the foremost emergency-level care. In this respect, all injured road users are received in just one hospital. Established communication procedures between the police and the hospital ensure continuous sharing, updating and verification of post-collision information relating to road injury status. It may, therefore, be concluded that all fatal and serious injuries resulting from traffic collisions in Malta are recorded by the police."*

Patrick Cachia Marsh, Transport Malta



**Bulgaria: police report mandatory for insurance compensation**

*"Bulgarian traffic law obliges every driver, rider or a witness to call the police in case of a road collision with a dead or injured person. The police report has to be presented for insurance companies in order to get compensation for material damage and liability claims. Due to these procedures, we are convinced that the police attend all road collisions resulting in injuries or death."*

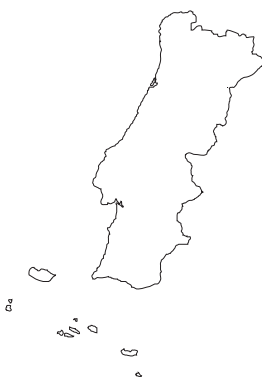
Aleksii Kesyakov, State-Public Consultative Commission on Road Safety



**Switzerland: unreported collisions with injuries considered as hit-and-run offences**

*"In Switzerland active participants of a road collision resulting in injuries have to call the police. If the police are not called, such collisions are considered as hit-and-run offences. After collisions the police have an obligation to follow-up the state of the injured road users to comply with 30 day definition. Moreover, in most cantons hospitals have to inform the police or the competent authority about an unnatural death."*

Yvonne Achermann, Swiss Council for Accident Prevention (bfu)



**Portugal: level of reporting of fatal road collisions by the police currently unknown**

The level of road death recording rates by the police in Portugal has not been estimated.

*"Many entities are involved in the registration of road collision data in Portugal and each entity has its own reporting system. Data are not centralised nor linked between different data sources. Moreover, hospitals might register inaccurate information due to health care system regulations or insurance compensation schemes."*

*"The possible underreporting of non-motorised road user deaths and injuries may partly explain why many sustainable urban mobility plans do not prioritise road safety. Underreporting of road deaths and serious injuries biases the benefit evaluation of cycling and walking promotion programs and undermines cost-benefit ratios of potential road safety countermeasures."*

João Cardoso, National Laboratory for Civil Engineering (LNEC)

#### 1.4 Procedures to complement road death data recorded by the police

Police data are and should remain the primary source for road death analysis. However, the actual number of road deaths can be estimated even when not all road deaths are recorded by the police. This can be done by using complementary data sources, such as hospital, death register or unnatural death records that may be made available in national statistical office administrations (table 1). These complementary sources generally might not contain information about the circumstances of a collision and are of limited relevance for identifying preventive measures.<sup>15</sup>

Strict data protection laws can make data linkage procedures challenging in some countries such as the Czech Republic and Estonia. In these countries personal identifiers are not available for research due to privacy regulation. A solution could be that data linkage takes place in a formal statistical office for which specific laws apply.

In cases where a personal identification code is used in all databases, the linkage procedure can be relatively simple.<sup>16</sup> Personal identifiers are used to match cases in Croatia, Cyprus, Denmark, Finland, Israel, Spain<sup>17</sup> and Malta.<sup>18</sup>

Linking procedures using personal identifiers can be further facilitated if linking data from different sources is done under one data exchange platform. This is the case in Sweden where the police and hospitals share information on road traffic victims under the STRADA platform. Access to personal identifiers is provided for a restricted number of professionals working with STRADA and the use of identifiers is strictly limited to statistical purposes for matching cases. Such a system facilitates road death and serious road traffic injury data collection and reporting. Moreover, this data system enables the efficient exchange of information if a road traffic victim died within 30 days. It reduces the risk that some road deaths might be missing from the final dataset, because all road traffic victims will be reported by hospitals to the same data platform.

Moreover, linking police and hospital records is essential for improving serious road traffic injury data collection. By improving the reporting rate of serious injuries, the reporting rate for the number of road deaths is likely to improve as well, as people who were first recorded as injured, may later die within 30 days.

It is more challenging to match cases if data sources use different identifiers. If two sources do not share a common identifier, matching can be done by comparing other characteristics in both data files. If the date of birth and date of a collision or hospital admittance are equal for a pair of records in both databases it is likely that the records describe the same person. This becomes even more likely if other available characteristics are equal, such as region, gender, name of casualty, traffic mode, severity, name of the hospital or where the external cause of injury is a road collision. This approach could work if all information were coded correctly.<sup>19</sup> Yet, due to limited resources and pressure from other tasks the institutions responsible for dealing with some of the information might not complete it correctly or some details might be missing. The lack of quality or missing information in the data makes linkage of files more complex, preventing a clear determination of the intersection of the sources.<sup>20</sup>

---

<sup>15</sup> Derriks, H.M. and Mak, P.M, IRTAD (2007), Underreporting of Road Traffic Casualties, <https://goo.gl/VbfTTo>

<sup>16</sup> Ibid

<sup>17</sup> Personal identifiers are used for deceased victims.

<sup>18</sup> Although in Malta hospital and police databases are not directly linked, the 7 digit national ID number is used to cross-reference and verify data between hospital and police databases.

<sup>19</sup> Bos N. et. al., Corrections for Under-reporting of Road Traffic Casualties in the Netherlands; Relevance and Method, <https://goo.gl/KFZ5LC>

<sup>20</sup> Ibid

Various procedures to link road death data recorded by the police with other sources exist in Austria, Belgium, Cyprus, Denmark, Germany, Finland, France, Italy, Luxembourg, the Netherlands, Malta, Romania, Spain, Sweden, Switzerland, the UK and Israel. Table 1 indicates the various data sources used in different countries to verify and complement police records. However, these procedures differ from country to country. Information from some countries is highlighted in more detail later in this report.

There are no procedures to link or complement road death data recorded by the police in Bulgaria, Croatia, the Czech Republic, Estonia, Ireland, Greece, Hungary, Latvia, Lithuania, Portugal, Poland, Slovenia, Slovakia, Serbia and Norway.

Data validation procedures should be applied in all PIN countries in order to detect changes in recording rates by the police and to verify the completeness of road death data recorded by the police.

	Police data	Hospital data	Death certificates	Unnatural death records by prosecutor	Media	In-depth accident investigations	Are there procedures to complement or link data recorded by the police with other sources?	Road death data management by
AT								National statistical office
BE								National statistical office
BG								Police
CH								Federal Roads Office
CY								Police
CZ								Police
DE								National statistical office
DK								National statistical office
EE*								Road Administration
EL								National statistical office
ES								Directorate General for Traffic
FI								National statistical office
FR								French Road Safety Observatory
HR								Police
HU								National statistical office
IE								Road Safety Authority
IL								National statistical office
IT								National statistical office
LT								Police
LU								National statistical office
LV								Road Traffic Safety Directorate
MT								National statistical office
NL								National statistical office for actual number and Rijkswaterstaat for registered number
NO								Road Administration
PL								National statistical office
PT								National Road Safety Authority
RO								Road Traffic Directorate
RS								Road Traffic Safety Agency
SE								Swedish Transport Agency
SI								Police
SK								Police
UK								Department for Transport

**Table 1. Sources of road death data and institutions responsible for the final road death data management.**

Information source: PIN Panellists. Green – data from the indicated institution is used for procedures to link or complement data recorded by the police; red – data from the indicated institution is not used to link or complement data recorded by the police; \*EE – in-depth accident investigations with all collisions resulting in road deaths or five or more injured road users started in 2017.

## Recommendations to Member States

- Countries that have not yet estimated what proportion of road deaths are reported by the police should conduct a study to estimate it. This can be done by comparing individual police road death data records with other independent sources, such as death certificates, records of unnatural deaths and hospital data to identify the actual number of road deaths.
- If the study shows that road deaths are missing from the police records, establish procedures to complement road death data recorded by the police with other sources, such as death certificates, records of unnatural deaths and hospital data. Use these procedures to detect changes in recording rates by the police over time, identify the missing cases and their characteristics and act upon improving the data completeness.
- Improve data linkages between police, health and justice institutions concerning collisions involving injured road users.
- Consider establishing one platform for recording road traffic victims by the police, hospitals and other professionals dealing with them.
- Resolve data privacy issues for research and statistical purposes by allowing that data linkage based on personal identifiers takes place in a formal statistical office for which specific laws apply.
- Dedicate necessary financial and human resources for other institutions involved in road death data reporting.



SE

### Sweden: strong cooperation between the police and hospitals in collecting traffic collision data via the STRADA platform managed by the Swedish Transport Agency<sup>21</sup>

The Swedish Traffic Accident Data Acquisition (STRADA) platform is a national information system containing data on traffic collisions and injuries occurring on Swedish roads. The data in STRADA come from two separate sources: traffic collision reports provided by the police and medical reports provided by hospitals. The police are the main source for recording road deaths in Sweden, but the hospitals complement police data.

Since 2003, the police have a legal obligation to register road collision data in STRADA. Hospitals register data in the system on a voluntary basis, those who do are financially compensated by the Swedish Transport Agency.<sup>22</sup> Hospital reporting to STRADA has increased gradually from 29 hospitals in 2003 to 69 in 2016, encompassing all of the hospitals with emergency rooms for treating road collision injuries. Anonymous data from STRADA is used by national, regional and local authorities and by researchers and associations working on traffic safety issues.<sup>23</sup>

By combining and matching reports from two sources, more detailed information of traffic collisions and their consequences is collected. If the police did not attend the scene of a road collision, hospitals reporting to STRADA will add a record of a person injured in a collision. Fatal collisions that did not appear in police records are not investigated in detail.

The Swedish Transport Agency cooperates closely with the Swedish Transport Administration which has seven researchers working on collision investigations.

<sup>21</sup> Swedish Transport Administration, Swedish Traffic Accident Data Acquisition (STRADA), <https://goo.gl/Jw1qBQ>

<sup>22</sup> Swedish Transport Administration, <https://goo.gl/oUJ34N>

<sup>23</sup> Database STRADA, Swedish Traffic Accident Data Acquisition (STRADA), <https://goo.gl/ZS7ZyB>





### The Netherlands: linkage of three data sources to determine the actual number of road deaths

Before 1996, all road death statistics in the Netherlands were based solely on police reports. Since 1996, Statistics Netherlands has been mandated to capture what is called the actual number of road deaths, in close consultation with the Ministry of Infrastructure and Water Management.

Statistics Netherlands uses three different data sources to capture the complete number of road deaths in the Netherlands:

- Data from the cause of death forms filled out by a coroner;
- District court files on deaths from unnatural causes;
- Police collision reports from the database of registered crashes in the Netherlands known as BRON. This database is managed by the Ministry of Infrastructure and Water Management.<sup>24</sup>

Statistics Netherlands starts from the premise that all road deaths are registered in at least one of the three sources listed above. The actual number of road deaths is calculated by making use of all three data sources. Double counting is corrected, as are casualties that do not comply with the definition, such as collisions abroad, collisions on private roads, known suicides and deaths from natural causes.<sup>25</sup>

The procedure outlined above has revealed that those deaths that go unrecorded by the police are often elderly cyclists and elderly mobility scooter riders, probably in collisions not involving motor vehicles.<sup>26</sup>

Between 2010 and 2015, on average, 15% of all road deaths were missing on average in the BRON database but were captured by Statistics Netherlands.<sup>27</sup> The recalculated number of road deaths in the Netherlands was 3711 over the period 2010-2015, compared to 3128 registered by the police. In 2016 alone, 96 road deaths were not recorded by the police. The problem is that there is no detailed information available for the road deaths missing in the police database, as the information mostly comes from coroners who were not present at the collision scene. No collision investigation is done, so the available information is very limited. For this reason, the EU road crash database (CARE) and various international organisations use BRON data only. Another effect is that very little can be learned about such collisions in order to improve road injury prevention.

According to the CARE data, the Netherlands was ranked third best in the EU in 2016 with 31 road users killed per million population.<sup>28</sup> In the PIN report, the Netherlands was ranked sixth with 37 deaths per million population in 2016 as ETSC takes into account the actual number of road deaths.<sup>29</sup>

<sup>24</sup> SWOV, Fact Sheet: Road Deaths in the Netherlands, <https://goo.gl/CztZPL>

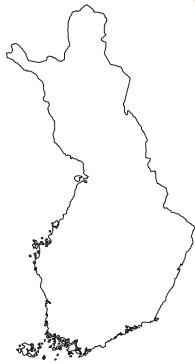
<sup>25</sup> Ibid

<sup>26</sup> Ibid

<sup>27</sup> Ibid

<sup>28</sup> European Commission, Press release (2016), Road Safety: new statistics call for fresh efforts to save lives on EU roads, <https://goo.gl/5uHAHF>

<sup>29</sup> ETSC (2017), 11<sup>th</sup> Road Safety Performance Index report, Ranking EU Progress on Road Safety, <https://goo.gl/JvZSDq>



### Finland: all road deaths are investigated in-depth, cooperation between organisations is comprehensive

In Finland local police officers enter information about a road collision they attended into an information system at local district level. Local police districts transfer the data to a central register, from which the data are processed and transferred to Statistics Finland three times a month. Statistics Finland checks them, makes further inquiries to the police districts and supplements the data, where necessary, with data from other registers. Social security numbers are used to match cases.

Road death data in the police records are compared with death certificate data derived from statistics on causes of death. The data are also supplemented with information on collision locations from the Finnish Transport Agency's Digiroad<sup>30</sup> information system; data from the fire rescue services' PRONTO<sup>31</sup> statistics on collisions; data on coercive measures from Justice Statistics; and data on fatal drink-driving collisions from the road collision investigation teams (OTI). Data on road traffic collisions are also supplemented annually with the Finnish Transport Safety Agency's data on driving licences and motor vehicles.

OTI coordinates independent in-depth investigations of all fatal road collisions and administers the data collected from them. The amount and quality of the statistical data are unique by international standards. The database also includes deaths of drivers from natural causes.

*"We follow an extensive and thorough procedure to register the number of road deaths as described above. This procedure allows road safety professionals to say that we capture close to 100% of all road deaths in Finland. In addition, the OTI database includes deaths from natural causes that occur while driving which are excluded from the official database. The road collision investigation teams investigate all fatal road traffic collisions. The findings of the teams are assembled into annually published reports, and the data are also used for research, education and administrative work."*

Esa Rätty, Finnish Crash Data Institute (OTI)



### Germany: actual number of road deaths determined by using records of unnatural deaths

The actual number of road deaths in Germany is determined by the national statistical office. If the road victim dies, the hospital records an unnatural death which usually leads to an investigation by the public prosecutor.

The prosecutor begins the investigation with police required to provide information about the collision. In this case the responsibility of the police is to provide information to the prosecutor, but not to gather road death statistics. In addition, the police provide information about the characteristics of all road traffic collisions to the statistical office of the respective German state. Based on the information provided by the police and certificates of unnatural deaths provided by the prosecutor, the national statistical office determines the actual number of road deaths.

If a doctor does not certify a road death as an unnatural death, the information about a road traffic victim would go unrecorded. It is unknown how often this happens.

<sup>30</sup> Digiroad is a national database that contains the geometry of the Finnish road and street network featured with the most important road attribute data, <https://goo.gl/Yw3xyV>

<sup>31</sup> Rescue services have developed a resource and accident statistics program (PRONTO) which includes all cases when a fire brigade is alerted (including road collisions). However, this database does not include cases when only ambulance or police is alerted so this is not a complete database of road collisions.

**ES****Spain: linkage of police data and public death records to verify road death figures**

In Spain all unnatural deaths have to be investigated by the police and coroners to determine the cause of death and identify criminal responsibility.

The police only have a legal duty to follow-up on the victims during the first 24 hours after the collision. Though in the case of a severe collisions, the follow-up might be longer. Road deaths occurring between 24 hours and 30 days among victims known to the police are identified by linking the police database with public death records<sup>32</sup> collected by coroners. This linkage is carried out by the Directorate General for Traffic (DGT) and the results are incorporated into the national register of road victims.

Data from coroners are also used to detect road deaths not registered by the police. These cases are investigated and included into the national register. In 2016, 14 road deaths were missing in police records (0.8% of total recorded road deaths).

**UK****UK: high accuracy of police reporting, data cross-checked with death certificates**

According to the UK experts, road death recording rates by the police are thought to be accurate. Hospitals alert the police when a traffic victim dies. Comparisons of road collision reports filled in by the police with death registrations show that very few, if any, road deaths are not recorded by the police. However, a considerable proportion of non-fatal casualties are not known to the police.<sup>33</sup>

**BE****Belgium: work in progress to improve road death data verification procedures and collection of serious road traffic injury data**

In Belgium police records are complemented with numbers of unnatural deaths recorded by the public prosecutor's office. The national statistical office (NSI) adds road deaths that were not recorded by the police to the final road death numbers. The NSI can change the status of the victim, for example from seriously injured to road death. As part of a pilot project, the NSI is currently cross-checking police records with death certificates for the year 2014. The results of the project will be available later in 2018.

A few years ago a working group of police and national statistical office representatives as well as research institutes, regional authorities and universities was launched. The group discusses how to improve the quality and completeness of the road collision database. One of the currently considered topics in the group is road collision data linkage with other databases, such as the vehicle database.

In order to gain more insight into the extent and nature of underrecording in the collision statistics, the Belgian Road Safety Institute (now VIAS Institute) carried out a study comparing the numbers of serious road traffic injuries based on police data with other data sources on road traffic casualties, particularly the "Minimal Clinical Data" records from hospitals.

*"The study revealed that approximately only one in five seriously injured cyclists is registered by the police. Other road user groups are under-reported by the police but to a lesser extent. We do not rule out the possibility that fatally injured road victims might be missed by the police, especially cyclists in single-bicycle collisions who did not die at the scene. If these victims are not taken account of by the public prosecutor's office, they are not included in Belgian road death statistics. The under-reporting problems are currently being discussed in a road collision database working group."*

Nina Nuyttens, VIAS institute

<sup>32</sup> So-called "vital registration" records in Spain, referring to public records of births, marriages and deaths.

<sup>33</sup> Department for Transport (2017), Reported Road Casualties in Great Britain: 2016 Annual Report, <https://goo.gl/kFxtKh>



### Poland: study showed procedures to complement road death data recorded by the police should be implemented for determining the actual number of road deaths

In 2009, 4572 people were killed in road collisions in Poland according to police records. But the actual number should have been at least 4817 according to a pilot study carried out by the Polish Motor Transport Institute (ITS) in 2010.<sup>34</sup> The actual number of road deaths was estimated by comparing police data to death certificates obtained from the Central Statistical Office (CSO) recorded as people who died due to injuries in road traffic collisions according to the ICD-10 code. Due to strict data protection rules, an ID identifier could not be used for the study. Records from two databases were combined based on gender, date of birth, statistical code of the collision site and place of death. It was assumed that the date of the road collision would be earlier or the same date of death registered in the death certificate database of the CSO.

The data linkage procedure by ITS showed that some road user deaths recorded in the police database were not recorded as such in the death certificates obtained from CSO. It was also found that some deaths registered in the CSO database as road deaths were registered as injured road users in the police database. Almost half of road deaths not registered by the police were pedestrians.

*"The ITS research confirmed that road death data published by the police may be underreported. Our research proved that procedures determining the actual number of road deaths in Poland should be improved. While the ID numbers of road traffic victims were not available for the ITS study, the police headquarters and the national statistical office have access to the personal identifiers which makes it possible to combine data from the police and death certificate databases. Based on the findings and recommendations of the ITS study, we ask for an urgent introduction of procedures that would complement road death data recorded by the police in Poland."*

Ilona Buttler, Polish Motor Transport Institute (ITS)



### Estonia: strict data protection laws prevent road death data linkage procedures

So far road death data recorded by the police have not been validated in Estonia. One of the reasons is strict personal data laws. The Estonian Roads Administration attempted to assess the possible underreporting level by comparing police records with data from health care providers and the health insurance fund.

*"Many obstacles have arisen during the analysis, such as strict personal data protection rules that do not allow to match cases and different road death definitions used in the health sector which is not limited to 30 days. Moreover, the definition of a road collision differs in the Road Traffic Act and health sector regulations."*

Maria Pashkevich, Estonian Roads Administration

In 2017 Estonia launched an in-depth accident investigation process to examine all fatal collisions or collisions resulting in five or more injured road users. Analysis by in-depth accident investigation teams in Estonia will enable validation of the number of road deaths in police records in the future.

<sup>34</sup> Source: PIN Panellist



### Police road death data quality control

Data quality control procedures are needed to improve or maintain high quality information in police reports. Data quality has many aspects. Training and education of police officers and data submission standards are important. Completeness, reliability, accuracy and logical entry of data at the processing stage are also crucial. The thorough study of police data quality control did not fall under the scope of this report as it would require substantial additional analysis. However, an example of police data quality control from France is included below.



### France: road death data quality control and data cross-checking with media articles

Any road traffic collision involving physical injury known to the police is a subject of an analysis report (BAAC) completed by the competent police force or the gendarmerie, according to the site of the collision.

The technical team from the French Research Centre on Risks, Environment, Mobility and Planning, under the supervision of the French Inter-Ministerial Road Safety Observatory (ONISR), carries out first level road death data quality control: verification of the formats and completeness of the headings enabling identification of each collision. After the first step of data quality control, the data become accessible to the departmental road safety observatories (ODSR) for a second stage of verification and corrections, with the assistance of road management authorities. A final quality control at a national level is carried out before publication of the number of road deaths.

The Injury Accident Analysis Bulletin (BAAC) files are compared to the “fast feedbacks” in order to ensure that each report is complete.

## 1.5 Improving knowledge: access for researchers to road collision databases; in-depth accident investigations; event data recorders

### 1.5.1 Access for researchers to road collision databases

Road death data management is carried out by the designated authorities, as well as other organisations that have access to detailed collision records or hospital record files (the responsible authorities in different PIN countries are indicated in table 1). The most common organisations responsible for road death data management are national statistical offices (Austria, Belgium, Denmark, Germany, Greece, Finland, Hungary, Italy, Luxembourg, Malta, the Netherlands and Israel), national authorities dealing with road safety (Estonia, France, Ireland, Latvia, Norway, Portugal, Romania, Serbia, Spain, Sweden and Switzerland) and the police (Bulgaria, Cyprus, Croatia, Czech Republic, Hungary, Lithuania, Poland, Slovakia and Slovenia). In Great Britain data management procedures are carried out by the Department for Transport together with the national statistical office.

In the questionnaire used as the basis for this report, PIN experts were asked if research institutions and authorities involved in road safety work have direct access to the road collision database. Ensuring access to data for researchers advances the knowledge on road safety problems. Moreover, research findings contribute to formulating and implementing evidence based road safety policies.

In many PIN countries researchers can get access to anonymised, disaggregated (stratified) road death data. Frequently the access is provided after signing an agreement with the authority responsible for providing data or by submitting a written data request and adhering to terms and conditions of data usage. In Serbia research institutions can access the road death database through an online application without signing an agreement on data usage. Research institutes in Hungary could buy data until 2015 but, due to administrative problems, getting data is currently challenging.

In the Netherlands, qualified research institutes may be allowed to access detailed data (i.e. data that contains information that can lead to the identification of individuals) in the Statistics Netherlands database, but results can only be exported outside the Statistics Netherlands organisation under strict conditions and under the terms of a signed contract. Police reported data on traffic collisions is also available for research purposes.

### 1.5.2 In-depth accident investigations

In-depth road accident investigations are a valuable source of information on the circumstances of road traffic collisions. The findings are used to identify the contributing risk factors in fatal or serious road collisions and to prevent such collisions in the future. Several PIN countries have in-depth road accident investigation teams.

There is no pan-European data collection for in-depth accident investigation results. An initiative to do so would help support the identification of the areas that need immediate attention in developing collision countermeasures and support the evaluation of measures implemented in the EU.<sup>35</sup>

The EU-funded DaCoTA project built a network of 22 in-depth accident investigation teams in 19 countries. The final deliverable was a harmonised in-depth collision investigation protocol and the creation of tools supporting the accident investigation teams on data collection: 99 collisions were investigated in a pilot study. The database was developed in order to store in-depth accident data in a harmonised way and to facilitate the exchange of data collected.<sup>36</sup> However, the pilot project has not developed into a harmonised and systematic pan-European in-depth accident investigation data collection system.

In any case, this specialised in-depth accident investigation data collection from limited samples of severe collisions for the purposes of research to help to reduce road deaths and injuries should not be confused with comprehensive recording of road deaths by the police and other organisations in order to determine the number of road deaths.

### 1.5.3 Event data recorders

Research on preventing road traffic collisions could be further facilitated by access to information stored in Event Data Recorders (EDR). EDRs record a range of vehicle data over a short timeframe before, during and after a triggering event (such as airbag deployment) and are typically used to record information about road traffic collisions which cannot be reliably identified by the usual police investigations.<sup>37</sup>

The European Commission's May 2018 proposal to revise the General Safety Regulation 661/2009 includes mandatory fitment of event data recorders in new cars and vans. EDRs can offer first-hand information about the safety systems available on the vehicle and their operation. Additional information could include speed information (as well the driving speed before braking, or the speed of impact), measures of collision severity and vehicle manoeuvres.<sup>38</sup>

### Recommendations to Member States

- Ensure that road safety research institutions have access to road collision data and research findings are used to improve road safety.
- Conduct in-depth accident investigations in appropriate representative samples of collisions resulting in serious injuries and deaths.
- Ensure that research institutions and in-depth accident investigation teams, have access to EDR data to better understand the risk and contributory factors of fatal and serious collisions and design appropriate countermeasures.

---

<sup>35</sup> DaCoTa, Road Safety Knowledge System, <https://goo.gl/50G6Vb>

<sup>36</sup> DaCoTa (2012), Deliverable 2.5 Final Report on the Pan-European In-Depth Accident Investigations Network, <https://goo.gl/d3OUuK>

<sup>37</sup> ETSC (2017), Position Paper: Revision of the General Safety Regulation 2009/661, <https://goo.gl/xwBS5E>

<sup>38</sup> Ibid

### Recommendations to EU institutions

- Support Member States in collecting harmonised in-depth accident investigation data relating to fatal and serious injury collisions.
- Building on the work of the DaCoTA project, create a pan-European in-depth accident investigation database.
- Within the context of the revision of Regulation 2009/661 concerning Type-Approval Requirements for the General Safety of Motor Vehicles, mandate Event Data Recorders in all new vehicles and require the data to be made available for accident investigation.

### 1.6 Road death data comparisons in the EU - road accident database (CARE) and CaDaS glossary

Set up in 1993, CARE<sup>39</sup> is the EU database with detailed data on individual road collisions resulting in death or injury. CARE is used to identify and quantify road safety problems in Europe, to evaluate road safety measures and to facilitate information exchange on road safety. Participation in the road collision data collection and data sharing is compulsory for all EU members.

CARE is managed by the road safety unit of DG MOVE in cooperation with Eurostat and is also assisted by the Road Accident Statistics National Experts Group (CARE Experts Group). CARE contains detailed data on individual collisions. These data are collected by the national authorities based on police data. Every year the national authorities provide a road collision dataset through a secure data exchange system.

Most countries submit data into CARE according to recommendations set out in the Common Accident Data Set (CaDaS) glossary.<sup>40</sup> The glossary consists of a minimum set of standardised data elements, aiming at comparable data collection in Europe. CaDaS is implemented on a voluntary basis in national road collision data collection systems and is being adopted gradually by EU countries. Member States first have to assess whether a variable they collect differs from the definition in CaDaS. If this is the case, police reporting might be changed. CARE contains comparable harmonised data collected at national level, allowing for more reliable analyses and comparisons across EU countries.<sup>41</sup>

Parts of the national data sets have been incorporated in the CARE database with their original national structure and definitions. However, as existing national road collision data collection systems are not always compatible or comparable between countries, the European Commission provides and applies transformation rules when uploading a national data set, allowing CARE to have compatible data.<sup>42</sup>

Full access to the complete CARE database is available to three authorities per Member State. Other organisations, such as the European Parliament, other Directorate Generals of the European Commission or ETSC have to make a request for a specific query. A number of general statistical reports and some road death data are publicly available.<sup>43</sup>

### Recommendations to EU institutions

- Consider using the actual number of road deaths when available (e.g. the Netherlands) in the CARE database.

---

<sup>39</sup> Community database on Accidents on the Roads in Europe

<sup>40</sup> European Commission, CARE Database, CaDaS (2017), <https://goo.gl/6WSafZ>

<sup>41</sup> Eurostat meta data, <https://goo.gl/TEsRhU>

<sup>42</sup> Eurostat, Road Accident Fatalities – Statistics by Type of Vehicle, <https://goo.gl/NJCmyh>

<sup>43</sup> European Commission, Mobility and Transport, CARE Reports, <https://goo.gl/Roaa9M>



# PART II

## DATA RECORDED:

### killed at the site vs 30 days, alcohol and drug-related road deaths, use of mobile devices, natural deaths and suicides

#### 2.1 More than half of all killed road users die at the site of a collision

Nineteen PIN countries collect data on the proportion of fatally injured road users who died at the site, within 24 hours or within 30 days following a road traffic collision.

Countries that collect these data can provide different levels of detail. For example in Estonia, Finland, the Netherlands, Switzerland and Serbia the number of road users killed dying at the site, within 24 hours and within 30 days are provided separately (table 2).

In countries where data are available, more than half of road traffic victims are recorded as dying at the site of a collision. The highest proportion of those reported as killed at the site is in Slovenia with as many as 80% followed by Lithuania and Estonia with 78%.

**Table 2. Proportion of road deaths recorded as occurring on the spot, within 24 hours and within 30 days over the period 2007-2016 or any year(s) available.**

Data source: PIN panellists. \*NL - in the Netherlands data within 24 hours means dying on the same day of a collision. \*\*BE – road death that occurs within 3 hours of the collision is considered to be a road death on the spot. \*\*\*HU – number indicated in the table for deaths on the spot and within 24 hours also include deaths within 48 hours. \*\*\*\*SE – 73% represents the proportion of road deaths occurring on the day of a collision. †PT, RS – data for road deaths on the spot include death that occurred during transportation to the hospital.

	Road death at the site	Within 24 hours (excluding at the site)	Road deaths within 30 days (excluding at the site or within 24 hours)	Time period covered	Data source
CH	63%	13%	24%	2007-2016	Police
EE	78%	10%	12%	2007-2017	Road Accident Information System
FI	66%	26%	8%	2007-2016	In-depth accident investigation
NL*	57%	17%	26%	2007-2016	Police
RS	61%	17%	22%	2007-2016	Police
AT	69%		31%	2012-2016	Police
BE**	83%		17%	2007-2016	National statistical office
HR	62%		38%	2007-2016	Police
LT	78%		22%	2010-2017	Police
PL	69%		31%	2007-2016	Police
PT†	78%		22%	2010-2016	Police
RS†	78%		22%	2007-2016	Police
SI	80%		20%	2012-2017	Police
CZ		91%	9%	2007-2016	Police
ES		86%	14%	2016	Police
HU***		84%	16%	2007-2016	Police
IT		83%	17%	2007-2016	Police
SE****		73%	27%	2016	Hospitals
SK		92%	8%	2007-2016	Police



The numbers provided in table 2 are difficult to interpret and research is lacking. Some possible explanations of large differences between countries in the proportion of road users killed recorded as dying at the site, within 24 hours and within 30 days can be differences in vehicle safety and road infrastructure safety levels; differences in the procedures or quality of the emergency services and hospital care; the different nature of road traffic collisions; there might be some missing cases when the police did not attend the scene of a collision or there was no follow-up to record a road death that occurred within 30 days after a collision. However, the differences between countries should be further researched.

### **Recommendation to the EU institutions**

- Conduct research identifying the reasons for large differences between countries on the proportion of fatally injured road users who were recorded as dying at the site, within 24 hours or within 30 days following a road traffic collision.

## **2.2 Alcohol-related road death data collection**

There is a widespread consensus that the actual number of alcohol-related road deaths in many countries is higher than the officially-reported numbers. The European Commission estimates that the actual number of alcohol-related road deaths in the EU is up to 25% of all road deaths.<sup>44</sup> Yet based on official data reported by EU Member States, the proportion of drink-driving deaths in the EU is around 13% of all road deaths.<sup>45</sup>

There are differences in national definitions of deaths attributed to drink-driving. The major European project SafetyNet recommended using the following definition: “any death occurring as a result of a road accident in which any active participant was found with a blood alcohol level above the legal limit”. Austria, Cyprus, Germany, Denmark, France, Croatia, Italy, Poland, Portugal, Switzerland and Israel have formally adopted the SafetyNet recommended definition, but the legal blood alcohol concentration (BAC) limit is not the same in all these countries.<sup>46</sup>

The SafetyNet definition does not guarantee that pedestrians and cyclists are considered as active participants, because in most countries there is no legal BAC limit for these groups so they might not be subject to testing. This compounds the issue of underreporting. If the SafetyNet definition is accepted internationally, correction factors need to be developed to make possible meaningful comparisons that consider differences in legal BAC limits.<sup>47</sup>

There are indications that not all active road users involved in a road collision that resulted in death or serious injury are systematically tested for alcohol and, therefore, underreporting in alcohol-related deaths in national road death statistics is present (table 3).

Depending on the case and the country, there are several reasons why road users who participated in a fatal road traffic collision might not be tested for alcohol or test results might not be recorded in the statistics, including:

- Testing for alcohol is not done systematically, only when the police suspects the collision is due to alcohol;
- Prosecutor decides not to test road users for alcohol;
- Only drivers are tested for alcohol (not other active participants, such as vulnerable road users);
- Post-mortem alcohol tests or tests on unconscious road users cannot be carried out due to legal constraints;
- When tests are done by medical authorities, due to different reasons, the results might not be communicated to the police.

<sup>44</sup> ECORYS, COWY (2014), Study on the prevention of drink-driving by the use of alcohol interlock devices, <https://goo.gl/hMh4To>

<sup>45</sup> ETSC (2018), SMART, Progress in Reducing Drink Driving in Europe, <https://goo.gl/TjNGA>

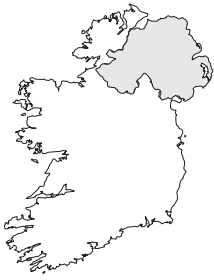
<sup>46</sup> Ibid

<sup>47</sup> Vissers L. et. al. ITF-OECD IRTAD (2018), Alcohol-related road casualties in official crash statistics, <https://goo.gl/Ur6ubV>

**Table 3. Drink-driving tests of road collision participants.**

Source: PIN Panellists.

	Is there an obligation to test <u>all</u> active participants (drivers, PTW and bicycle riders, pedestrians) in a road collision, either alive or dead (to enable the SafetyNet definition to be applied)?	Are alcohol tests done <u>systematically</u> in practice for all active participants of a road collision, either alive or dead?
AT	Yes	No. Killed and unconscious road users are not tested for alcohol unless the prosecutor requires.
BE	Yes	No. Alcohol tests are rarely done for killed and seriously injured. Even slightly injured and unhurt are not systematically tested for alcohol. Moreover, the police database only contains breath test results, results of potential blood tests are unknown.
BG	Yes	n/a
CY	No. Only drivers, PTW riders, bicycle riders and dead pedestrians are tested for alcohol.	Yes
CZ	Yes	No. Killed and unconscious road users are not tested for alcohol unless the prosecutor requires it.
DE	No, only suspected drivers and riders.	No. Only alive suspected drivers are tested. In case of a single vehicle collision when nobody else has been injured, the alcohol test will not be done.
DK	Yes	n/a
EE	No. Only drivers are tested for alcohol.	No. Police are not systematically testing road users for alcohol.
ES	No. Only drivers and cyclists are tested for alcohol.	Killed drivers and cyclists are always tested by coroners. The number of surviving persons tested depends on the specific police force. Testing all drivers and cyclists is not feasible yet, so the goal is to identify representative samples of drink-driving collisions. The main problem lies in collisions involving hospitalised persons, who in most cases are not tested for alcohol. For interurban roads, alcohol test results are available for 68% of drivers. The sample of collisions with all drivers tested is used for estimating the proportion of alcohol-related collisions.
FI	Yes	Yes
FR	Yes	Yes
EL	No. Only drivers are tested for alcohol.	No. Police are not systematically testing road users for alcohol.
HR	Yes	Road users are not tested if a doctor decides it is too dangerous because of the injuries the victim sustained in a road collision. All road collision participants whose state allows it are breath tested and if the test is positive, blood and urine shall be taken to confirm the level of alcohol. If a road user was killed, blood and urine samples are taken during autopsy. When results come out, data are filled in police reports.
HU	No. In case of a fatal collision the test is not always done. Only suspected drivers are tested for alcohol.	Not always. Drivers are almost always tested for alcohol, pedestrians and cyclists only in problematic cases.
IE	There is an obligation to test drivers, motorcyclists and pedal cyclists per se, but if the person in charge of the mechanically propelled vehicle (including a pedal cycle) is under the influence of an intoxicant, the police member may form the opinion that this is so and arrest without a breath test.	For the participants involved in a collision who have been killed there is a post-mortem toxicology analysis completed through the hospital system. For the participants involved in a collision who have survived, as aforementioned there is an obligation for the police member to test these drivers per se, but if the person in charge of the mechanically propelled vehicle is under the influence of an intoxicant, the police member may form the opinion that this is so and arrest without a breath test.
IT	Yes	No. Alcohol tests are done only when alcohol is considered to be the main contributory factor in a fatal collision.
LU	Yes	n/a
LV	Yes	Yes
LT	Yes	Yes
MT	No	No. Police are not systematically testing road users for alcohol, tests are based on suspicion. The cause of death is established by the health authorities following a post-mortem examination (including toxicology analysis) as part of a magisterial inquiry. However, these data are collected to establish liability rather than for statistical and analysis purposes and very often are not recorded in the police database. Statistics regarding alcohol-related road deaths are not published by the National Statistical office.
NL	Yes	No. Police are not systematically testing road users for alcohol.
PL	Yes	Yes
PT	Yes	No. Police are not systematically testing road users for alcohol.
RO	Yes	n/a
SE	No. Bicycle riders and pedestrians who are alive at the scene of a collision are not tested.	Yes
SI	Yes	Yes
SK	Yes	No. Alcohol tests are done only when alcohol is considered to be the main contributory factor of the fatal collision.
UK	No. If the police attend the scene, they may not ask drivers and motorcyclists to provide a sample or a driver or motorcyclists may refuse to do so.	No. Dead road users are not tested by the police. The coroner can request alcohol data for any road death though does not always do so.
CH	No. According to the law, they may be tested for alcohol.	No, not in all cantons. In most cantons, tests are done systematically. In some cantons, tests are done according to the severity of the collision, the suspicion of alcohol consumption, the type of road user, the time when the collision occurred, etc.
IL	No. Only suspected drivers and riders are tested for alcohol.	No. Police are not systematically testing road users for alcohol.
NO	No. Tests are done for alive participants. A killed road user will be tested upon request of the police.	No. Police are not systematically testing road users for alcohol.
RS	Yes	n/a

**IE****Ireland: road users killed in collisions routinely checked for alcohol use, but there still are cases when alcohol tests are not completed**

If a police member forms the opinion that a person is under the influence of an intoxicant, then they may arrest without a preliminary breath test at the scene. It is possible to take a specimen of blood from a driver taken to hospital who is incapacitated following a serious road traffic collision and to test the specimen for intoxicants. The doctor must give consent for the specimen of blood to be taken. The driver is asked, on regaining capacity, whether they consent to the issuing of a certificate of the test result on the specimen. Refusal is an offence.

**NL****The Netherlands: majority of drink-driving collisions not reported**

There are various reasons why alcohol breath tests are not always done in the Netherlands. It is also possible that even when the alcohol test is done, the results are not always recorded in the road collision database. Based on official figures, there were only 9 alcohol-related deaths in 2015, but SWOV's study estimates that the actual number was from 75 to 140.<sup>48</sup>

It is legally impossible to carry out post-mortem alcohol tests in the Netherlands as a deceased person cannot be brought to justice for violating the law, unless a district attorney explicitly requires a post-mortem blood test.

**ES****Spain: killed drivers and cyclists are always tested by coroners, tests conducted in hospitals are not reported to the National register**

According to current law, the police officers must conduct the alcohol breath test as long as the driver's condition allows it. These are the cases when the driver is not injured, sustains minor injuries or is hospitalised but can be submitted to a breath test. The test must be conducted and recorded in the road traffic collision database, but this is not always the case. When the tests are conducted at hospitals, the data are not communicated to the police due to legal constraints and, therefore, are not captured in the national register. Killed drivers and cyclists are always tested during the mandatory autopsy conducted by coroners. Most of these postmortem tests are communicated to the national collision database.

**Recommendations to Member States**

- Introduce obligatory testing for alcohol for all active road users in all collisions resulting in road deaths or injuries and collect data systematically.
- Adopt the SafetyNet recommended definition of a drink-driving casualty as "any death or serious injury occurring as a result of a road accident in which any active participant was found with a blood alcohol level above the legal limit", whilst recognising it differs among countries and does not include all alcohol-related road deaths.

**Recommendations to EU institutions**

- Adopt the SafetyNet recommended definition of a drink-driving death and update the CaDaS guidelines accordingly, whilst recognising that it differs among countries and does not include all alcohol-related road deaths.
- Encourage Member States to breath-test and subsequently blood-test for alcohol all active road users involved in collisions resulting in road deaths or serious injuries and to carry out a blood test for all such road users who are deceased.

<sup>48</sup> SWOV, Factsheet, Driving under the influence, <https://goo.gl/5TbqrU>

### 2.3 Drug-driving related road death data collection

Drug-driving remains significantly less well understood than drink-driving. Alcohol is easier and cheaper to detect in road users and the effects, prevalence and consequences of drink-driving are well known.<sup>49</sup> All EU countries have limits on the amount of alcohol drivers can consume. For other drugs, legal thresholds are not always defined.<sup>50</sup>

Most PIN countries already have legislation in place to deal with illicit drugs and many have introduced legislation directly aimed at reducing drug-driving. These vary in form depending on the type of drug (illicit/licit, i.e. medicines) and different penalties apply depending on the type used and the severity of impairment.<sup>51</sup>

The definition of driving under the influence of drugs depends on the country's laws. It may refer to a driver who has a measured reduction of cognitive or psychomotor skills, impulsivity; or more than a defined amount of drug in the blood or saliva, expected to produce such effects at that level; or any trace of drugs in the blood.<sup>52</sup>

The important issue is to know what proportion of road deaths are related to drug-driving to better understand the scope of the problem. No comparable data are available for road collisions related to illicit drugs and psychoactive medicines, though these have been receiving increasing attention over the past decade.<sup>53</sup> The detection of drug-drivers can depend on the qualification or training of the police. Increasing number of drug-drivers might be effected by improved police training to detect drugs. Drug tests across the PIN countries are not systematically done for all active participants of fatal or serious road collisions (table 4). In case of fatal and serious collisions, in many countries drug tests are only done if the police or the prosecutor suspect drug consumption. The most commonly identified reason for irregular drug testing is that it is an expensive procedure.

There are many different drugs and drug testing requires different methods depending on what the test operator has to find out (e.g. to determine if a person consumed drugs; to find out whether the person is under the influence of a particular drug or to investigate for intoxication/cause of death). Drug tests can be based on blood, urine, hair or oral fluid. In autopsy cases gastric content and vitreous humor (a sample taken from the eye) can be used. On site drug tests might take 5 to 10 minutes, while laboratory tests might take hours or days, considering shipment to laboratory, sample preparations, analysis and reporting.

---

<sup>49</sup> ETSC (2017), Preventing Drug Driving in Europe, <https://goo.gl/KtDFfi>

<sup>50</sup> EMCDDA, Drugs in Focus, <https://goo.gl/BEkDMJ>

<sup>51</sup> ETSC (2017), Preventing Drug Driving in Europe, <https://goo.gl/KtDFfi>

<sup>52</sup> EMCDDA, Drugs in Focus, <https://goo.gl/BEkDMJ>

<sup>53</sup> Ibid

**Table 4. Drug tests.**

Source: PIN Panellists.

	Are drug tests done for all active participants of a road collision, either alive or dead?
AT	n/a
BE	No. A drug test may be imposed on the alleged perpetrator of a traffic collision or on anyone who may have helped to provoke it, even if it is the victim. The result of this possible test is not included in the road accident database.
BG	No. Drug tests are only done if there is a reason to suspect drug consumption.
CY	No. Roadside drug tests for vehicle drivers have been introduced in Cyprus since 25/1/2018. The drivers of all vehicles involved in road collisions are tested. Until recently, drug tests were only performed by the State General Laboratory for deceased drivers. The relevant law only requires drivers and PTW and bicycle riders to be tested.
CZ	No, but drug tests are commonly used by the police and applied for all participants of a road collision.
DE	No. Drug tests are only done if there is a reason to suspect drug consumption.
DK	n/a
EE	No. Usually done for all on-spot deaths. The drug test is usually carried out if a prosecutor suspects drug-driving. The testing procedure is difficult to carry out.
ES	Only drivers and cyclists are tested for drugs. Killed drivers and cyclists are always tested by coroners. The number of surviving persons tested depends on the specific police force.
FI	No. Only if there is a reason to suspect drug consumption. Police forces select road users submitted for drug testing based on the Coercive Measures Act. Road accident investigation teams consider drug usage within every investigation. Information on forensic post-mortem reports are in use.
FR	No. It is a legal obligation but drug tests are not always carried out. Drug tests are expensive and difficult to carry out. Police forces select the road users submitted for drug testing.
EL	No. According to the law, all drivers involved in a fatal road collision have to undergo a blood test. However, in practice, this is not always the case.
HR	No. Drug tests are only done if there is a reason to suspect drug consumption. Police forces select the road users submitted for drug testing.
HU	No. In all fatal road collisions an alcohol test will be done. If alcohol is not detected, a drug test will be done.
IE	If a driver is involved in an injury collision it is mandatory for the Garda member to test for both alcohol and for drugs. If the Garda member forms the opinion that the driver involved in the collision is under the influence of an intoxicant, they can arrest the driver and test for alcohol and drugs at the station.
IT	No
LU	Yes. If a person is injured or killed in a road collision, all active participants of a road collision are tested.
LV	No. Drug tests are only done if there is a reason to suspect drug consumption.
LT	No. Drug tests are only done if there is a reason to suspect drug consumption.
MT	No. However toxicology tests are carried out for all victims who are subject to a post-mortem examination upon the request of the court expert appointed during the magisterial inquiry. The police officer may request a drug test where there is suspicion of illegal drug use. However, although drug-driving is an offence, there is no road-side forensic-grade drug test available for use by the Maltese Police Force. Drug testing therefore needs to be done at the hospital following an injury.
NL	No. Drug driving tests are done occasionally in case of serious suspicion only and with people who are alive only. The results are not reported in the road collision database. Drug tests are more difficult to carry out than alcohol tests.
PL	No. Regulation allows drug tests of all active participants of a collision. Drug tests are only done if there is a reason to suspect drug consumption. The number of such tests has increased in recent years, especially for fatal collisions.
PT	No. Drug tests are only done if there is a reason to suspect drug consumption. Testing is obligatory in case of fatal or serious collisions. Positive screening results must be confirmed by blood sample analysis.
RO	No. Drug tests are only done if there is a reason to suspect drug consumption.
SE	No. It is a legal obligation but drug tests are not always carried out. Drug tests are expensive and difficult to carry out. Police forces select the road users submitted to drug test, according to the user's profile (e.g. gender, age, behaviour).
SI	No. If a road collision results in a road death, the medical drug tests are done to those road users who are suspected to have caused a collision. In other cases, the police officer can decide to test active participants of a road collision with a quick drug test and, if the result is positive, a medical exam has to be undertaken.
SK	No. Drug tests are only done if there is a reason to suspect drug consumption.
UK	No. Drug tests are frequently conducted on fatalities and, at police discretion, on living casualties.
CH	No. Drug tests are only done if there is a reason to suspect drug consumption. Drug tests are more difficult to carry out than alcohol tests. In some cantons, the police are trained to recognise drug-impaired drivers. Police do not use fast drug tests anymore.
IL	No. There is no legal obligation.
NO	No. Drug tests are only done if there is a reason to suspect drug consumption.
RS	No. Drug tests are not always done. Traffic police officers are not always equipped with drug tests. Even when they are, drug tests have to be conducted restrictively because they are very expensive.
NO	No. Tests are done for alive participants. A killed road user will be tested upon request of the police.
RS	Yes



### Cyprus: newly-introduced drug-driving tests reveal many tested drivers were under the influence of drugs

At the beginning of 2018 a new law was put into force in Cyprus, enabling the police to perform roadside checks for driving under the influence of drugs. Both the screening and the evidential tests are performed on saliva samples. The law provides that the police may perform drug checks after a road collision, a traffic violation or when there is reasonable suspicion that a driver is driving or attempting to drive after or during the use of drugs. Moreover, the police may also perform random drug checks. No limits are set in the law and a driver is prosecuted if any traces of drugs are found in the evidential laboratory test. Currently the police only performs targeted checks. Out of 104 drug-driving tests conducted so far, 74 were positive.<sup>54</sup>

#### Recommendations to Member States

- Improve monitoring of drug use in traffic to gain more insight into its prevalence, development and trends.
- Test all road users for drug use as a minimum when there is a reason to suspect drug consumption.
- Train police forces properly on when and how to perform drug screening, field impairment tests (e.g. preselection based on checklist, saliva test, confirmation test) and use of roadside screening devices.

#### Recommendations to EU institutions

- Standardise monitoring methods by establishing a common framework for Member States to use.
- Develop common standards for roadside psychoactive drug-driving enforcement.

### 2.4 Use of mobile devices as a contributory factor in a road collision

Using mobile devices while driving is a growing road safety problem. Data on the proportion of collisions involving distraction are poor but experts estimate that distraction plays a role in 10-30% of them.<sup>55</sup> Studies also suggest that drivers using a mobile phone are approximately four times more likely to be involved in a collision than drivers not using a phone.<sup>56</sup> There is a long list of distractions that undermine the driver's or rider's ability to perform the driving task, but the phenomenon of mobile phone use while driving appears to be widespread and growing.

Countries have taken steps to legislate against use of mobile phones and other mobile devices while driving. Yet, traffic law enforcement activities on illegal use of mobile phones remain low.<sup>57</sup> Also, more work is needed to improve systematic data collection on mobile phone use at the time of a collision to assess the extent and distribution of the problem in individual countries. This will allow prevention efforts to be effectively targeted.<sup>58</sup>

In the majority of the PIN countries police reports do not have a field indicating that mobile phone use was a contributory factor in a collision. In some countries such information can be indicated in a text describing a collision by the police or in the analysis done by in-depth accident investigation teams. However, in the PIN countries the police do not have regular or established procedures with mobile

<sup>54</sup> Source: PIN Panellist

<sup>55</sup> TRL, TNO and Rapp-Trans for the European Commission (2015), Study on good practices for reducing road safety risks caused by road user distractions, <http://goo.gl/9asuLD>

<sup>56</sup> WHO, Mobile phones use: a growing problem of driver distractions, <http://goo.gl/qbe2j1>

<sup>57</sup> ETSC (2016), How traffic law enforcement can contribute to safer roads, <https://goo.gl/CSv9W5>

<sup>58</sup> WHO, Mobile phones use: a growing problem of driver distractions, <http://goo.gl/qbe2j1>

network providers to get information on mobile phone use, so it is difficult or even impossible for the police officer to determine whether a road collision was related to the use of a mobile phone. The Finnish in-depth accident investigation teams have the legal right to get information on the use of mobile devices.

In some PIN countries a prosecutor may request mobile network providers to disclose information on mobile phone use at the time of a collision. Generally, such requests are rare and the information is not systematically collected or available in a structured way in road safety statistics. While it is technically feasible to obtain information on mobile device use at a time of a collision, the extent of mobile phone use related collisions in the EU remains unknown.

### Recommendations to Member States

- Introduce procedures which allow police to verify whether a mobile phone was used at the time of a fatal collision by establishing information exchange between the police and mobile network providers.
- Consider systematic collection of data on collisions related to mobile phone use, including considering implications for police resources.
- Conduct roadside surveys to monitor the level of illegal use of mobile devices by drivers and riders.

## 2.5 Natural deaths and suicides in road traffic

According to the EU definition of a road death, deaths from natural causes and confirmed suicides should be excluded from national road death statistics.

Non-traumatic death by natural causes of a road user can be detected by autopsy or by reviewing the medical history of the victim. Examples are fatal heart failure or stroke. An episode of fainting or transient ischemic attack are not fatal, so when this causes a driver to run off the road and get involved in a fatal collision, this case should be counted as a road death. From these examples it is clear that the correct cause of death cannot always be derived from the collision scene and incorrect classification as a road death or vice-versa is possible. In some cases a driver's death might be incorrectly attributed to trauma, or post-mortem examination may be inconclusive or lead to conflicting opinions.<sup>59</sup> Deaths from natural causes while driving are rare - a review in 2003 revealed that around 2% of all road deaths were deaths from natural causes.<sup>60,61</sup> However, it is possible that the rates of deaths from natural causes occurring in road traffic could be under or over estimated.

When a suicide in a road collision is identified, the eventual (other) victims of a fatal suicide collision should be included in road death statistics, whereas the suicide committer is excluded. The presumption is that a suicide is a deliberate act and not an unintentional accident. It can also be difficult to definitely determine whether a road death was a suicide. The exact scope of the suicide problem in road traffic in the EU is not known, but academic studies estimate that between 1% and 7% of all driver deaths are suicides.<sup>62</sup>

---

<sup>59</sup> Virginia Routley et. al. (2003), Suicide and natural deaths in road traffic – review, <https://goo.gl/Bdgwtw>

<sup>60</sup> Ibid

<sup>61</sup> Moreover, the actual proportion of natural deaths in road traffic would also depend on the road safety level and travel behavior, and hence differ between countries.

<sup>62</sup> Virginia Routley et. al. (2003), Suicide and natural deaths in road traffic – review, <https://goo.gl/Bdgwtw>

A general practice in EU Member States is that deaths are only excluded as suicides if there is clear direct evidence such as a suicide note or a confirmation by a coroner. In Bulgaria, Czech Republic, Estonia, Greece, Luxembourg, Malta, Romania, Switzerland, Serbia a suicide is identified by the prosecutor. In Cyprus, the coroner determines if a road traffic collision was a suicide. In Finland, suicides are confirmed from cause of death certificates by Statistics Finland. In Latvia, Lithuania, Poland, Slovenia, Slovakia, Israel and Norway, suicides are identified by the police, in Italy by the police and pathologist, in Croatia, Ireland, Spain and the UK by coroners.

Suicides were supposed to be excluded from the police database in the Netherlands until 2011, but since 2012 it has not always been the case. If a suicide in road traffic is recorded in Denmark, this death is not recorded in the road collision database. However, when other road users are killed in a suicide collision, all victims of that fatal collision will stay in both the road collision and death register databases.

Finland and Estonia are the only EU countries which include confirmed suicides in national road death numbers.



#### FACTS: suicides on UK roads

Based on research for Highways England, using official coroners' records, there were between 15 and 41 suicides per year on England's road network in the period 2001 to 2014. Taking account of information obtained from other parts of the UK, PACTS<sup>63</sup> estimates that an average of over 50 deaths (2.6%) by suicide per year occur on the roads in the UK.<sup>64</sup> In light of research in other countries, such as Sweden and Finland, the true figure of suicides in traffic may be substantially higher.



#### Finland: suicides included in Finnish road death numbers

In Finland the proportion of suicides accounted for around 16% of all road deaths over the period 2012-2016.

*"There has been a long-lasting discussion on whether or not suicides in road traffic should be separated from other road deaths in our official numbers. No decision has been made yet. One issue is that even though the forensic post-mortem reports are available and most suicides can be identified, there also happens so called unclear collisions that cannot be easily identified from one information source to be suicides (or not). This affects the reliability of the suicide numbers. The shared interpretation is that if suicides are to be excluded from the official road death statistics they should still be reported visibly alongside the statistics. This would be justified since these suicides are committed in road traffic and they may endanger, traumatise and incapacitate other road users."*

Esa Rätty, Finnish Crash Data Institute (OTI)

<sup>63</sup> PACTS - Parliamentary Advisory Council for Transport Safety

<sup>64</sup> Harrison K. 2017 (PACTS), Suicides on UK Roads. Lifting the Lid, <https://goo.gl/QB9hnq>





### Sweden: suicides excluded from road death numbers

Since 2010 Sweden has presented data on suicides in road traffic separately from the overall road death data. A well-structured methodological approach has been developed to identify suicides which helps to reduce the number of unclear cases by using data from in-depth accident investigations and psychosocial investigations. Psychosocial investigation to find out whether a road death was a suicide is launched if there was a farewell message (oral or written); if the traffic collision was suspected in combination with psychosocial knowledge, such as recent known suicide attempts, resent indirect or direct suicidal communication, ongoing depression or mental illness or previous severe stressful life event. Another criteria is a traffic event that strongly indicates a suicide.<sup>65</sup>

*"Suicides are excluded from the road death numbers as this is a general international practice. It also makes international comparisons more accurate."*

*"Our well-established practice to determine which road deaths are suicides makes it possible to follow the pattern and numbers over time. Each year around 25 to 30 people (8%-10% of all road deaths) take their lives on Swedish roads. These data are used to work on preventive measures to reduce the number of suicides in road traffic."*

Anna Vadeby, National Road and Transport Research Institute (VTI), Sweden

### Recommendations to Member States

- When suicides are excluded from road death database, these should still be recorded separately and the data should be used for preventive measures.
- Work on stronger cross-sector collaboration, including highways, health, emergency services and the voluntary sectors.<sup>66</sup>
- Work with the health community on suicide prevention.

<sup>65</sup> Anderson A.L. et al. (VTI), Fatalities in road traffic; a result of accidents or suicides, <https://goo.gl/qHus41>

<sup>66</sup> Ibid

# ANNEXES

**A list of questions addressed to the PIN national experts in preparation of the report:**

## 1. Data collection

- Q1:** Is there a separate database for road deaths in your country or are data on road deaths included in the bigger road collision database? Note: in this questionnaire you will be asked questions regarding road death database. However, if road death database in your country is integrated in the bigger road collision database, treat the term road death database as road collision database.
- Q2a:** Do the police have different road death recording procedures for road users who died on the spot and for road users who may die later (but within 30 days)?
- Q2b:** Please describe this (these) procedure(s)
- Q3:** Please describe the procedure which starts with the description of the location and a detailed description of circumstances leading to the fatal crash and ends with the electronic report of a road death in your countries road death database.
- Q4:** How does your country record road deaths that the police did not attend (e.g. single bicycle, bicycle to bicycle, bicycle to pedestrian collisions, possibly also some single-motor-vehicle collisions)?
- Q5:** How the police and hospitals exchange information on a road death that happened within 30 days? Is it a responsibility of the police to follow-up if a road victim died within 30 days or do hospital inform the police about a road death?

## 2. Deaths within a day or later

- Q6:** Depending on availability, please provide the following data for 2007-2016 (if this timeframe is not available, please provide what is available):

The proportions of road deaths stratified by the period between crash date and day of death, as far as available, e.g.

- Road deaths on the spot
- Road deaths the same day
- Road deaths between 1 and 30 days after the crash date

Please provide what is available

## 3. Data validation

- Q7:** How does your country validate the numbers of road deaths registered by the police? (e.g. cross-check, or complement with other data sources: cause-of-(unnatural-)death statistics, hospital admissions, accident and emergency records, trauma registries or coroner files?)
- Q8:** Do research institutions and authorities involved in road safety work, have direct access to the road death database?
- Q9:** Are data from the road death database publicly available, and to what extent?

#### 4. Institutions and data

**Q10:** Which institutions are legally responsible for collecting and registering road death data in your country?

**Q11:** Who manages the road death database?

**Q12:** Which institution publishes the actual number of road deaths?

#### 5. Data recorded

**Q13a:** Are suicides excluded from the number of road deaths? If so, why?

**Q13b:** What is the procedure to identify a suicide?

**Q14:** How are deaths resulting from collisions between road and railway vehicles recorded (also pedestrian/cyclists collisions with railway vehicles): as road deaths or railway deaths?

**Q15a:** Are alcohol tests done for all active participants of a road collision, either alive or dead?

**Q15b:** If the answer to questions 14a is no, please explain why some road users are not tested.

**Q15c:** If it is a decision of a prosecutor to test road user for alcohol use, then in which cases the prosecutor would require an alcohol test?

**Q16a:** Are drug tests done for all active participants of a road collision, either alive or dead?

**Q16b:** If the answer to questions 15a is no, please explain why some road users are not tested.

**Q16c:** If it is a decision of a prosecutor to test road users for drug use, then in which cases the prosecutor would require a drug test?

**Q17a:** Do police reports in your country have a field indicating that a driver/rider was using a mobile device/a mobile phone at a time of a collision?

**Q17b:** Does your country have a procedure with mobile network providers so that in case of a collision the police could check if the person was on the phone (talking, sending messages, emails...?)

**Q17c:** Does your country have any way to identify if a collision was related to the use of mobile devices (e.g. in-depth accident investigation teams have the means to identify this)?

#### 6. Reporting problems

**Q18:** Are all road deaths reported to the police in your country?

**Q19:** If not all deaths are reported (to the police) what is the estimated underreporting rate?

**Q20:** Are there systematic difficulties or reasons for not reporting all road deaths?

**Q21:** Where there are reporting problems, are there actions taken to address the problem?

**Q22:** Does the level of underreporting in your country impact on policy making, research, campaigns, financing, interest in the road safety issues etc.? If yes, please indicate the problems.

## European Transport Safety Council

20 Avenue des Celtes  
B-1040 Brussels  
dovile.adminaite@etsc.eu  
Tel: +32 2 230 4106  
[www.etsc.eu/pin](http://www.etsc.eu/pin)  
🐦 @ETSC\_EU



European Transport Safety Council

