



ROAD SAFETY IN THE EUROPEAN UNION

Trends, statistics
and main challenges

April 2018

Road Safety in the European Union – Trends, statistics and main challenges

European Commission

This report is an internal working document summarising recent road safety statistics reported by the EU Member States.

For more information, contact the European Commission, Directorate-General Mobility and Transport, Unit C2 – Road Safety
move-infos@ec.europa.eu

<http://ec.europa.eu/roadsafety>

Manuscript completed in April 2018

Neither the European Commission nor any person acting on behalf of the Commission is responsible for the use that might be made of the following information.

Luxembourg: Publications Office of the European Union, 2018

© European Union, 2018

Reuse is authorised provided the source is acknowledged. The reuse policy of European Commission documents is regulated by Decision 2011/833/EU (OJ L 330, 14.12.2011, p. 39).

For any use or reproduction of photos or other material that is not under the EU copyright, permission must be sought directly from the copyright holders.

Print	ISBN 978-92-79-80284-3	ISSN 2363-4375	doi:10.2832/169706	MI-AC-18-001-EN-C
PDF	ISBN 978-92-79-80281-2	ISSN 2363-4383	doi:10.2832/060333	MI-AC-18-001-EN-N

Photographs

Cover image: © European Commission

p. 5: © European Commission;

p. 6: © iStock/ollo;

p. 12: © iStock/Tijana 87;

p. 16: © iStock/cookelma;

p. 19: © iStock/Teo Angelovski;

p. 20: © iStock/wavipicture;

p. 25: ©iStock/Blackzheep.

Table of contents

Foreword	5
<hr/>	
1. The EU road safety situation in 2017	6
<hr/>	
2. Monthly variation in road fatalities	12
<hr/>	
3. Seasonality by modes of transport and type of roads	16
<hr/>	
4. Day of the week and time of the day	20
<hr/>	
Conclusions	24
<hr/>	

COUNTRY ABBREVIATIONS:

AT	Austria
BE	Belgium
BG	Bulgaria
CY	Cyprus
CZ	Czech Republic
DE	Germany
DK	Denmark
EE	Estonia
EL	Greece
ES	Spain
FI	Finland
FR	France
HR	Croatia
HU	Hungary
IE	Ireland
IT	Italy
LT	Lithuania
LU	Luxembourg
LV	Latvia
MT	Malta
NL	Netherlands
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
SE	Sweden
UK	United Kingdom



People's safety has always been close to my heart. All road users, be it for private or professional reasons, deserve the highest level of safety and care.

The European Union has some of the safest roads in the world. It is leading by example, putting its experience and knowledge at the service of other regions, and is also promoting the highest possible standards on the global stage.

That being said, every year more than 25 000 people still lose their lives on EU roads, while another 135 000 are seriously injured. This is an enormous loss for individuals, families and society as a whole. The socio-economic consequences of this alone are estimated at EUR 120 billion annually for the EU. In light of this, there simply cannot be business as usual when it comes to road safety – I want to see changes urgently.

A year ago, EU transport ministers adopted the 'Valletta Declaration on Road Safety'. This was a major achievement, paving the way for the future, particularly on a new reduction target for serious injuries of 50% between 2020 and 2030.

On the back of this strong political commitment, we have started work on the road safety policy framework for the period 2020-2030. We intend to reconfirm 'Vision Zero' as our long-term objective and base this framework on the 'Safe System' approach. This is a holistic and inclusive way of ensuring that all key factors are addressed in preventing death and serious injury. The framework will also respond to new challenges, such as the growing number of vulnerable road users, the risk of distraction on the roads, and vehicle automation.

Any action we propose is based on road-safety data that we collect from the 28 EU Member States and beyond. This data allows us to adjust our policies and fine-tune the measures we recommend. There are many factors at play in serious and fatal road crashes, such as the type of roads, the vehicles we use, and the age and gender of road users. In this publication, we give you an in-depth view of monthly, weekly and daily variations in road fatalities.

We strive to further improve road safety in the EU by setting a common agenda for the decade to come and by ensuring road safety actors in the ecosystem come on-board for better results. Let's continue our work today for safer roads tomorrow!

A handwritten signature in blue ink, which appears to read 'Violeta Bulc'.

Violeta Bulc
EU Commissioner for Transport

1. The EU road safety situation in 2017

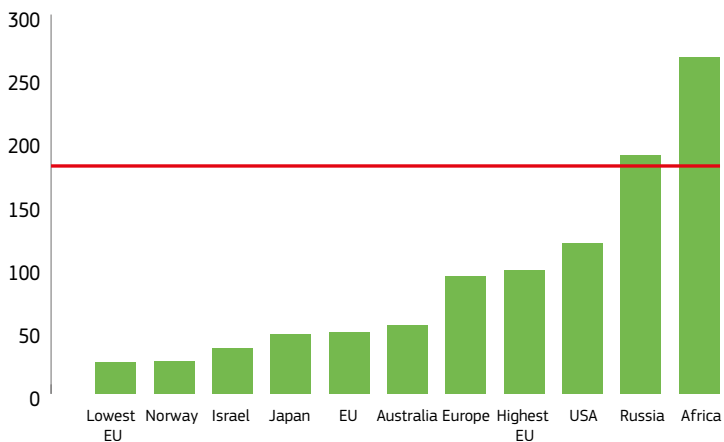
- In 2017, 25 300 people lost their lives on EU roads.
- This means a 2% decrease in the number of road deaths compared to the previous year.
- Between 2010 and 2017, the number of road deaths decreased by 20%, so 6 200 fewer people died on the roads last year than in 2010.
- The EU road fatality rate in 2017 was the lowest ever with 49 dead per million inhabitants.
- In 2017, countries with the lowest number of road deaths per million inhabitants were Sweden (25), the UK (27), the Netherlands (31), Denmark (32), Ireland (33) and Estonia (36).
- Countries with the weakest road safety records were Romania (98), Bulgaria (96) and Croatia (80).
- In 2017, eight EU countries recorded a fatality rate below 40 deaths per million inhabitants and 26 countries below 80 deaths per million inhabitants.



Roads in the EU are the safest in the world. The EU counts on average less than 50 deaths per million inhabitants, against 174 deaths

per million globally, 106 deaths per million in the USA and 93 deaths per million in geographical Europe.

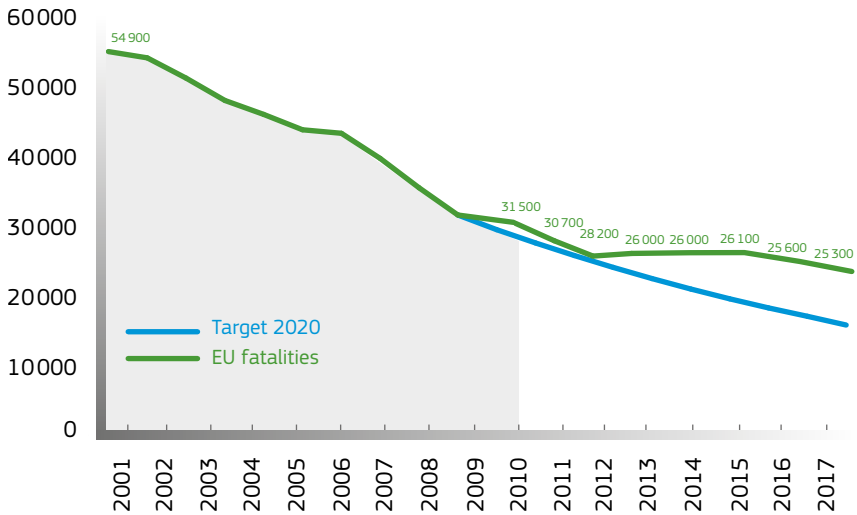
FATALITIES BY POPULATION



Progress in the last two decades in the EU has been remarkable: the number of fatal crashes fell by 43% from 2001 to 2010, and by another 20% between 2010 and 2017. However, the progress rate has slowed down in recent years. After two years of stagnation, 2016 marked a 2% decrease in the number of road deaths, and 2017 repeated the same pattern.

It is now quite clear that the current rate of reducing fatalities on EU roads will not be enough to reach the 2020 target of halving their number compared to the baseline year of 2010. A reduction rate of 14% would be necessary every year from now on to reach the targeted figures. Nevertheless, the aspirational target remains an important political tool and a powerful driver to achieve better results.

EU FATALITIES AND TARGETS (2010-2020)



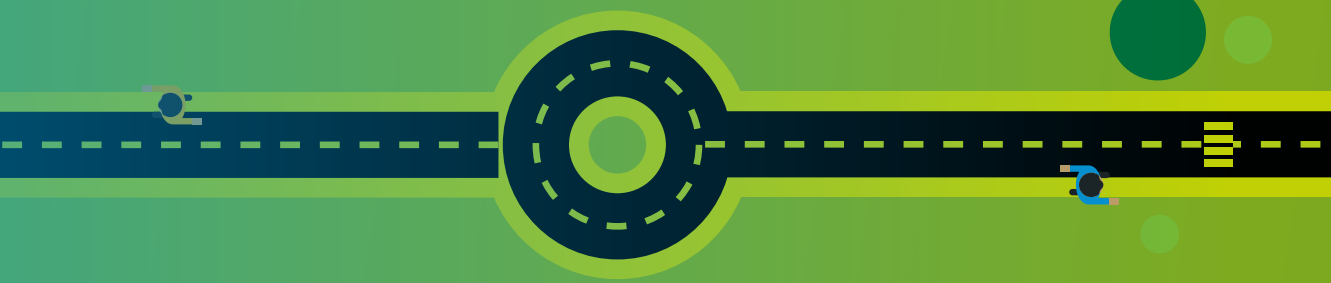
The road safety situation differs widely between Member States. Some of them report substantial progress, while others are still performing significantly below the EU average. However, the gap between the worst- and the best-performing EU Member States has been narrowing year after year. In 2017, none of the Member States registered a fatality rate higher than 100 deaths per million inhabitants, and eight of them recorded a fatality rate lower than 40 deaths per million inhabitants.

In 2017, the EU's best road-safety performers were Sweden (25), the UK (27), the Netherlands (31), Denmark (32), Estonia (36) and Ireland (33). On the other hand, the highest fatality rates were

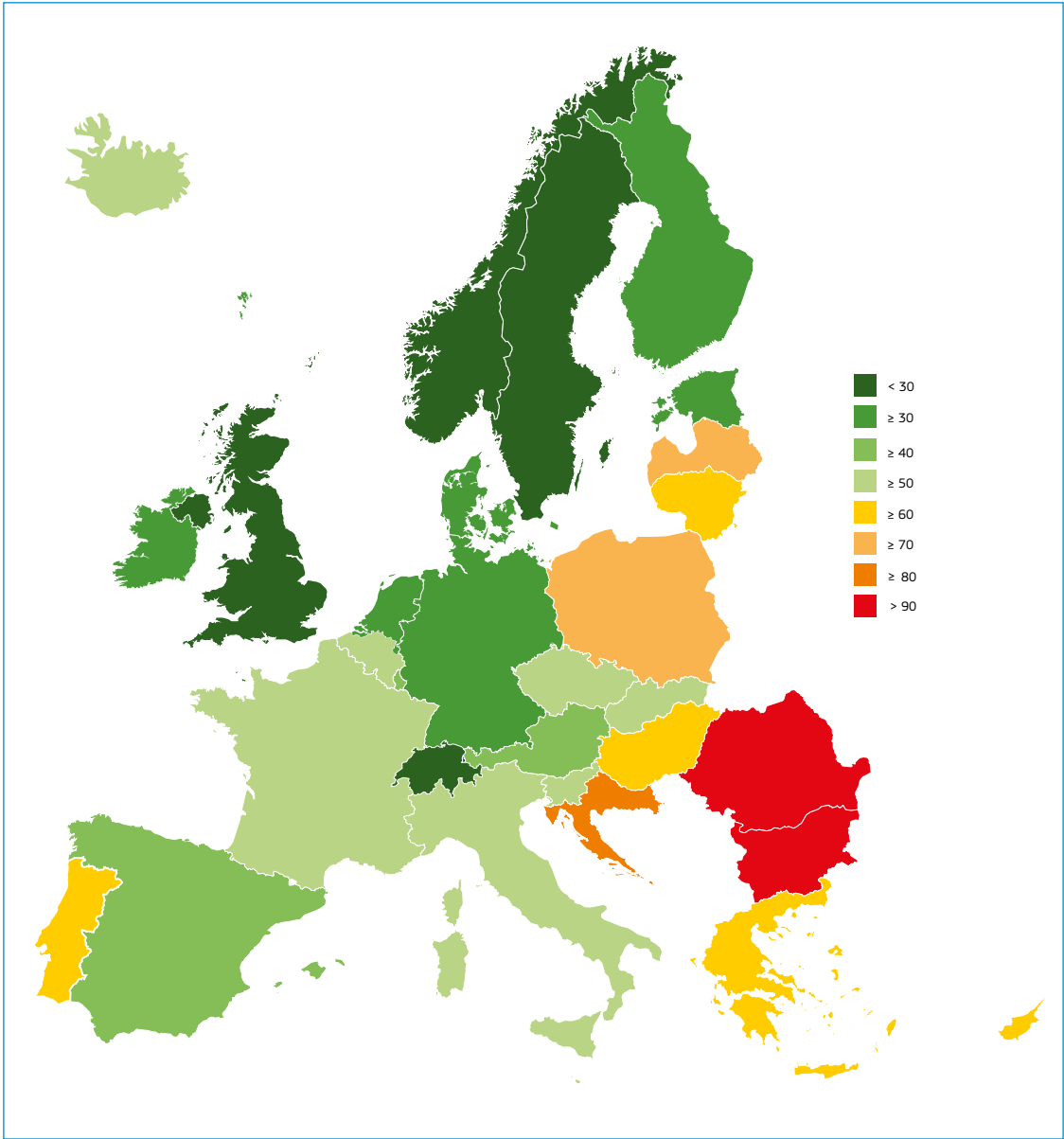
registered in Romania (98) and Bulgaria (96), followed by Croatia (80). From the beginning of the decade, the highest drops in the number of road deaths were recorded in Greece (-41%), Estonia (-39%), Latvia (-38%) and Lithuania (-36%). The EU average decrease was 20%.

In 2017, on average only about 8% of road fatalities occurred on motorways; 37% happened in urban areas and 55% on rural roads.

Car occupants accounted for the largest share of victims (46%). Together, vulnerable road users, including pedestrians, cyclists and motorcyclists accounted for the same proportion and were particularly exposed in urban areas. 21% of all



ROAD FATALITY RATES 2017





people killed on roads were pedestrians. Cyclists accounted for 8% of all road deaths in the EU. Motorcyclists, who are less protected during a crash, accounted for 14% of road fatalities. In general, fatalities among vulnerable road users have fallen to a much lesser degree in recent decades than among all road users.

In 2017, almost 14% of people killed on EU roads were aged between 18 and 24, although only 8% of the population fell within this age group. Young people are almost twice as likely to be killed in a road crash than the average person. Men were still largely over-represented among young victims: 80% of the young people who died in road crashes were men. This can be explained by different risk-taking behaviour and by the fact that young men statistically tend to take longer trips than young women.

Although older drivers are involved in fewer road crashes, elderly people in general are one of the highest risk groups, due to their fragility and

reduced tolerance to injury. Even if the number of elderly road victims has decreased over time, the total number of road deaths has fallen faster, meaning that the proportion of elderly victims tended to rise. While 18% of road fatalities concerned elderly people in 2010, this ratio reached 26% in 2017. Compared to the average population, the risk of being killed on the roads is almost one and a half times higher for an elderly road user.

In general, far more men than women are killed in road crashes: less than one quarter, 24% of all fatalities, concern women, against 76% of male fatalities. The fatality rate of elderly men is over twice the rate of elderly women in most EU countries. Male and female road fatalities also differ by type of road user. Among pedestrians, road fatalities affected almost twice as many women than men.

ROAD FATALITIES IN THE EU BY TYPE OF ROADS (2017)

8%



Motorway

37%



Urban areas

55%



Rural roads

SERIOUS ROAD TRAFFIC INJURIES

According to the European Commission's estimates, about 135 000 people sustain serious road traffic injuries on EU roads per year. This means that for every person killed in traffic crashes, five more suffer serious injuries. Serious injuries are not only more common but also often more costly to society because of long-time rehabilitation and healthcare needs.

As from 2015, Member States started to report data on serious injuries based on a new, commonly agreed definition following medical standards. The international MAIS trauma scale (Maximum Abbreviated Injury Score) has been chosen for the EU definition of serious road

traffic injuries. The Scale 3 and more (MAIS3+) applies to the seriously injured. This was a milestone in the work addressing serious road traffic injuries.

With the adoption of the 'Valletta Declaration on Road Safety' in 2017, EU transport ministers made a major step forward with far-reaching joint commitments. Among others, EU Member States agreed to introduce a 50% reduction target for serious road traffic injuries in the period 2020–2030. The Commission will continue to monitor and benchmark Member States' performance. Member States are encouraged to prioritise actions for the safety of vulnerable road users and safety in urban areas.



2. Monthly variation in road fatalities

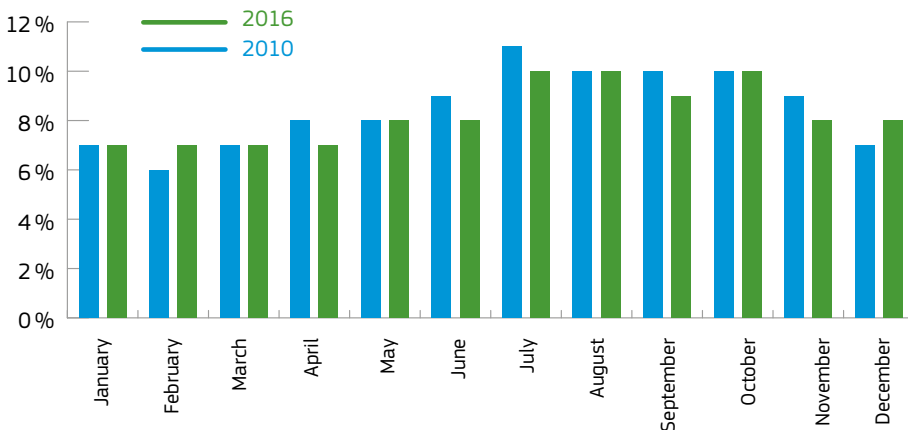
- Every year, the least number of road deaths are recorded in February, whilst most fatal accidents happen in July and August.
- The contribution of road fatalities by month varies however from country to country.
- Accident risk also varies seasonally with changing weather conditions.
- Variations throughout the year in the hours of daylight are likely to contribute to seasonal differences too.



The number of fatal road crashes shows a certain monthly variation in the EU. The seasonality or seasonal variations in road fatalities follows a very similar pattern year after year. Although the number of people who die in road accidents in Europe per year has fallen over many years, the monthly distribution of road fatalities has scarcely changed.

Generally speaking, the least number of road fatalities are recorded in February, whilst the most fatal accidents happen during summer holidays, in July and August. Without seasonality, 8.3% of fatalities would occur every month. Compared to this 'no seasonality' average, there are relatively few fatalities per month from January to April and relatively many more from June to October and in December.

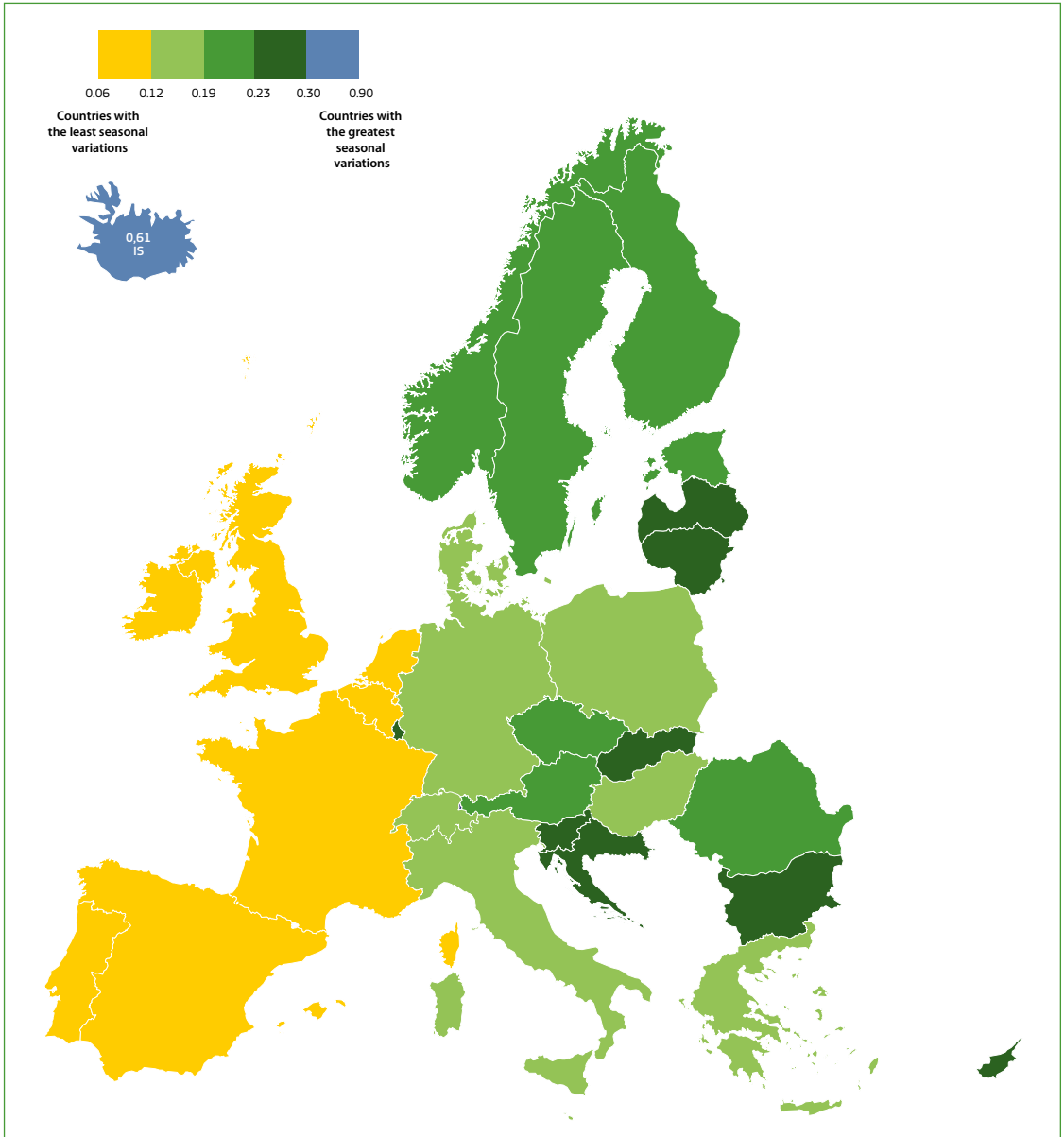
% OF FATALITIES BY MONTH

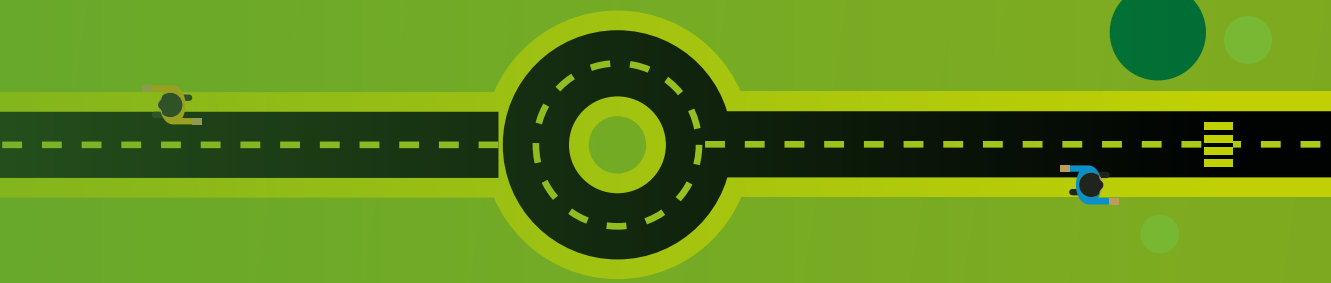


The seasonal variation of road fatalities is the result of several factors. The main cause is probably the change in travel patterns throughout the year. For example, many more trips are made for leisure and recreation during summer than winter.

The monthly variation in road fatalities differs considerably from one country to another. Seasonal variations are below average in most of the Western EU countries, and above average in most Central and Northern EU countries.

SEASONAL VARIATIONS IN ROAD FATALITIES



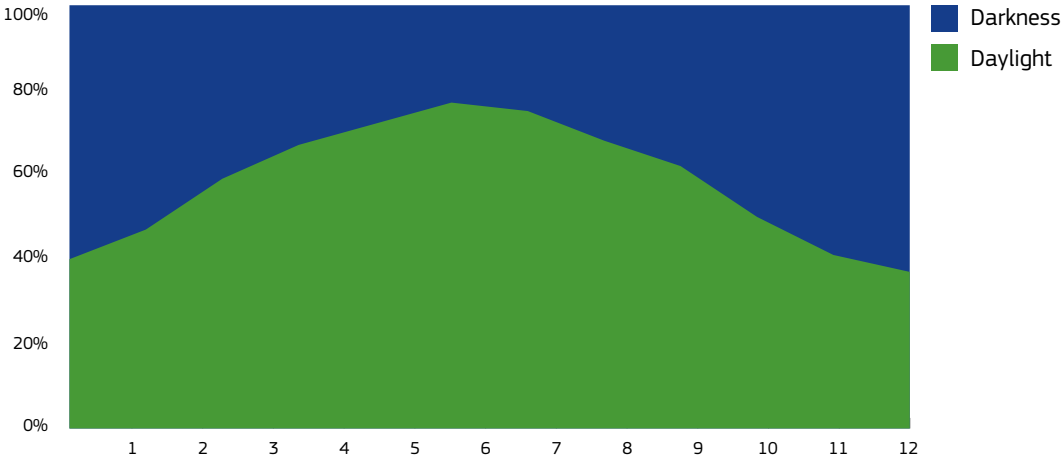


Accident risk also varies seasonally with changing weather conditions. The relative harshness of winters in Northern and Central Europe is likely to contribute to the greater seasonality for several countries in these areas.

also vary across Europe. In the EU Member States, over the whole year, 64% of fatalities occurred in daylight (including twilight), but the percentage was below 50% between November and January.

Variations throughout the year in the hours of daylight are also likely to contribute to seasonality, as this affects people's mobility patterns, which

% OF FATALITIES BY MONTH AND LIGHT



Source: CARE database, data available in April 2018.

3. Seasonality by modes of transport and type of roads

- The monthly distribution of road fatalities varies by modes of transport and type of road.
- The number of pedestrian deaths is highest in the winter, while the number of fatal accidents among motorcyclists is highest in June.
- Motorcycling is the mode of transport with the most seasonal fatality variations.
- There is less seasonal variation on urban roads than on rural roads and motorways.

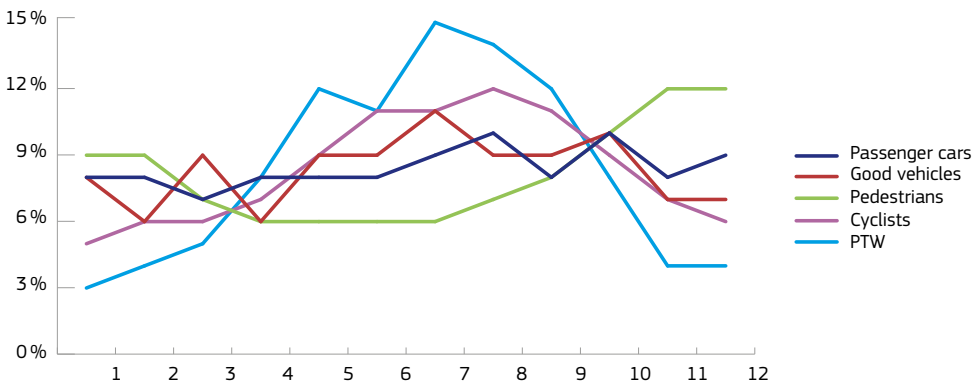


The seasonal variation in road fatalities also depends on the mode of transport. The seasonality for certain user groups clearly differs from the overall pattern. This is particularly true for vulnerable road users (VRU), such as riders of motorcycles and mopeds (powered two-wheelers), cyclists and pedestrians. For example, more riders of powered two-wheelers (PTW) are killed

in summer, and fewer in winter, as a result of there being more users in this group on the roads when the weather is better.

Deviations from the average are similar for cyclists, although to a lesser degree. Their travel habits are certainly affected by weather conditions but less so than PTW riders.

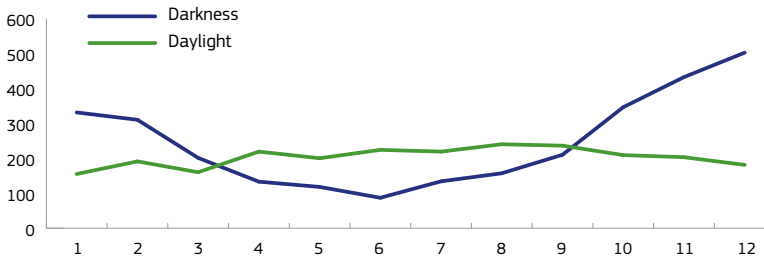
% OF ROAD FATALITIES BY MONTH



However, there is a category of vulnerable road users for which the monthly distribution of road deaths shows a very different pattern over the year. Most pedestrians are killed in winter, and especially in December, while there are relatively few road fatalities among them in summer.

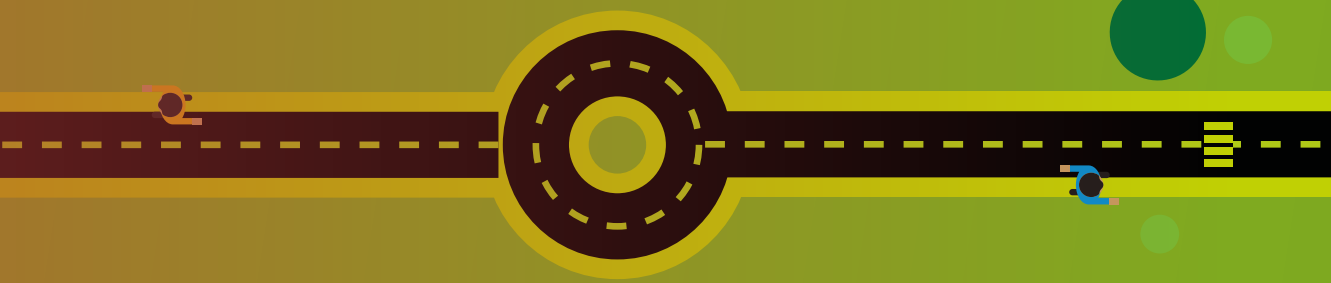
The reason for the increase in pedestrian fatalities from 6% of the annual total in April to 13% in December is probably due to hours of daylight and darkness. The number of pedestrian fatalities in December is almost twice that in June.

PEDESTRIAN FATALITIES



The seasonality of road fatalities also differs by geographical area. In Spain, for example, the proportion of road fatalities shows relatively little change by month, except for cyclists. By contrast, the proportions in the Nordic countries vary considerably by month, especially for pedestrians and motorcyclists. This phenomenon is mostly due to greater changes in weather conditions and hours of daylight in the Northern countries.

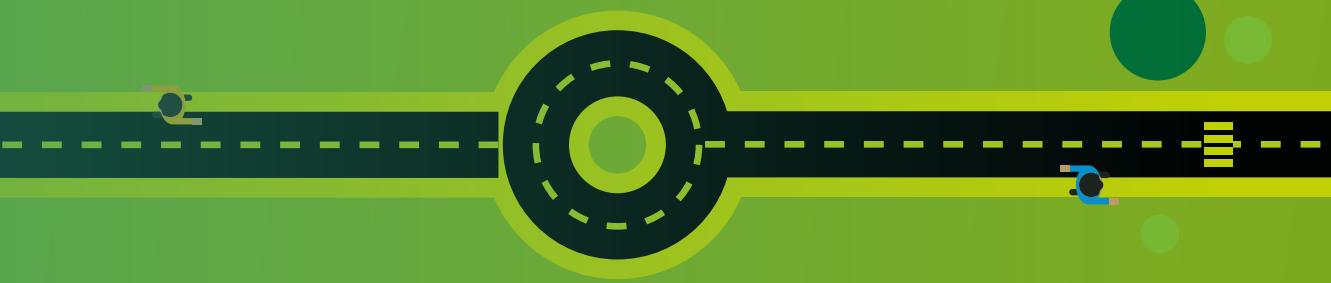
The monthly variation in fatal crashes can also be examined by types of road: motorways, rural roads and urban roads. Even if there are no drastic differences, in general, seasonality is in general is lower on urban roads than on rural roads and motorways. This is probably because changes in the hours of daylight and weather conditions have less impact in towns and cities.



4. Day of the week and time of the day

- The distribution of road deaths also varies according to the day of the week and the hour of the day.
- The daily variation in road fatalities is greater on Sundays than on any other day of the week.
- The distribution of road deaths by time of the day is similar from Monday to Thursday.
- Most fatalities happen in the afternoon and relatively few during the night.
- However, there is a peak in fatalities early on Saturday and Sunday mornings.

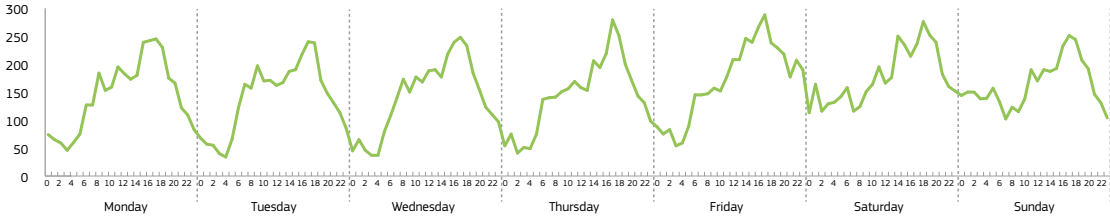




The distribution of road fatalities also varies by day of the week and time of the day. There are 168 hours in a week so, on average,

0.6% of fatalities would occur each hour throughout the week, if equally distributed..

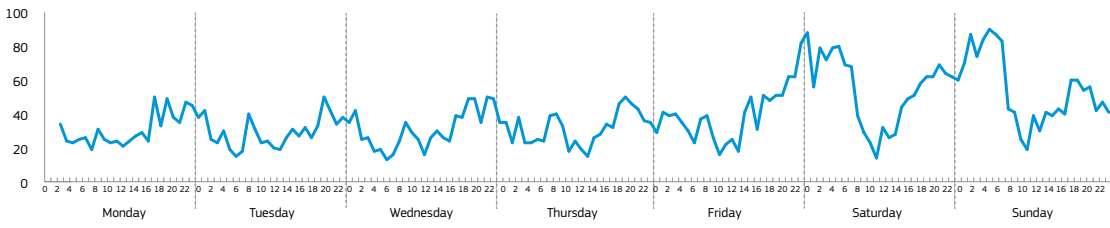
FATALITIES BY DAY OF THE WEEK AND HOUR OF THE DAY



The distribution of road deaths by time of the day is similar from Monday to Thursday. There is an afternoon peak every day and relatively few fatalities during the night. This is in line with changing traffic volumes. A high number of fatalities early on Saturday and Sunday mornings is also notable.

The peak during weekends is particularly pronounced for the age group between 15 and 30, reflecting the social habits of youngsters, and especially young drivers.

FATALITIES OF YOUNG PEOPLE (15-30) BY DAY OF THE WEEK AND HOUR OF THE DAY





On a daily basis, seasonality is quite similar throughout the year. The main difference concerns Sundays: there are relatively many fatalities on Sundays between June and September, and relatively few between November and February. This can be explained by an increased activity among road users during the summer holidays and a change in the choice of mode of transport, with a preference for riding and cycling.

Comparing different periods of the day, the greatest seasonal variations in the number of road deaths are recorded during the night, between 10pm and 4am. There is a clear peak

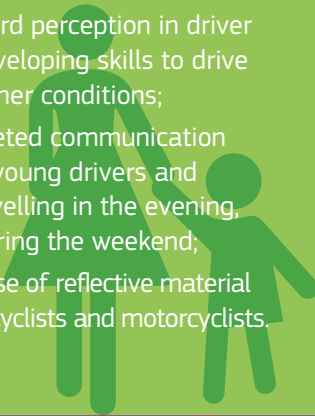
during the night period in August, reflecting greater mobility during the longer days of the summer holidays.

The variation in road fatalities by time of the day is also affected by geographical factors. The number of fatalities in Spain show a limited variation by month, while much bigger differences can be observed in the EU's Nordic countries. This is certainly due to more significant differences in hours of daylight and weather conditions in the Northern part of Europe over the year.

EXAMPLES OF MEASURES REDUCING ROAD-SAFETY RISKS LINKED TO SEASONALITY

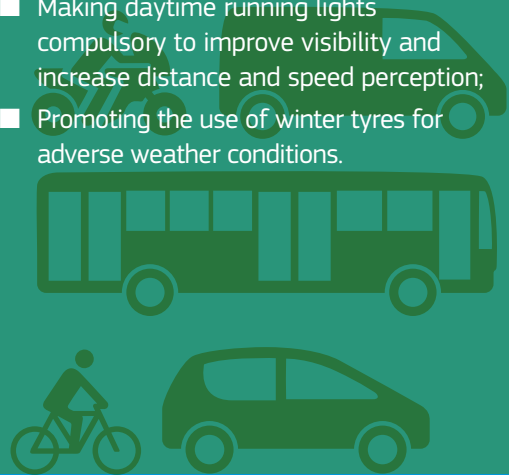
EDUCATION

- Raising awareness on road-safety risks in difficult weather conditions;
- Increasing hazard perception in driver training and developing skills to drive in difficult weather conditions;
- Launching targeted communication campaigns for young drivers and passengers travelling in the evening, at night and during the weekend;
- Promoting the use of reflective material by pedestrians, cyclists and motorcyclists.



VEHICLES

- Making daytime running lights compulsory to improve visibility and increase distance and speed perception;
- Promoting the use of winter tyres for adverse weather conditions.



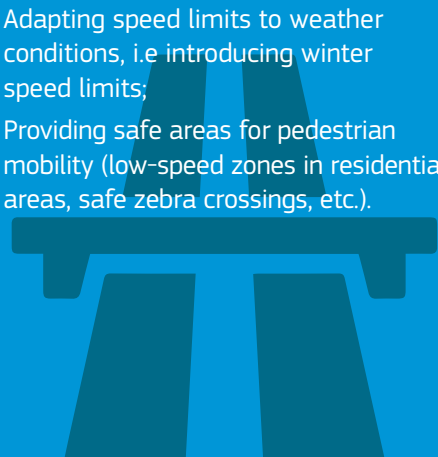
ENFORCEMENT

- Enforcing speed limits adapted to specific weather conditions;
- Enforcing rules on the use of protective equipment for vulnerable road users;
- Intensifying controls for drivers who infringe rules at pedestrian crossings and for pedestrians in breach of traffic regulations.



INFRASTRUCTURE

- Adapting speed limits to weather conditions, i.e introducing winter speed limits;
- Providing safe areas for pedestrian mobility (low-speed zones in residential areas, safe zebra crossings, etc.).





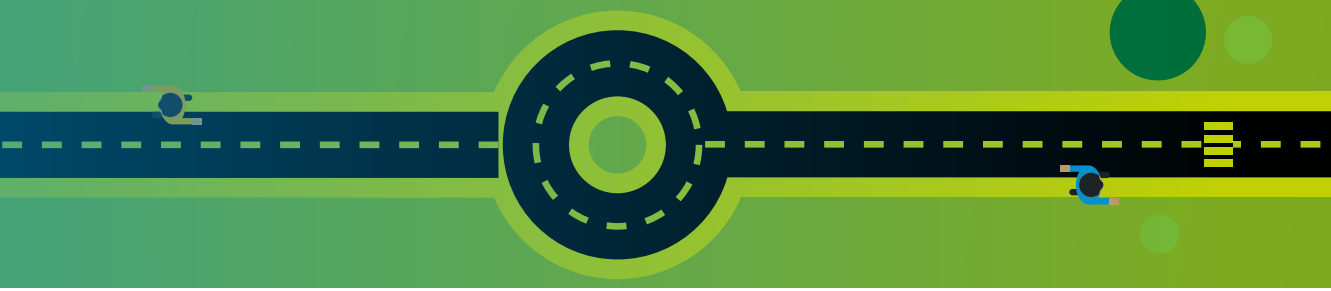
Conclusions

The European Union's progress in making its roads safer has been impressive. The EU cut the number of fatal road crashes by 43% between 2000 and 2010, and reduced them further by 20% from 2011 to 2017. The results are tangible: today, the EU is the world's safest region with 49 deaths per million inhabitants.

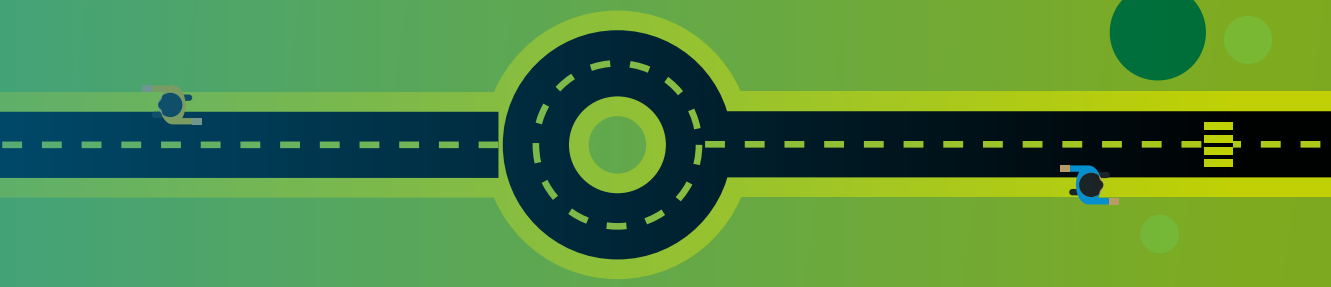
However, progress has stalled recently, and has been unequally distributed between different groups of road users. Fatalities among pedestrians, cyclists, motorcyclists and moped riders have not decreased at the same pace as in the overall population. Therefore, these vulnerable groups of road users deserve special attention from policymakers.

Road-safety risks linked to changes in weather conditions as well as risks involved in different mobility patterns depending on the day of the week or the time of day are affecting pedestrians, cyclists and motorcyclists, but also novice drivers much more than other road users. Data on seasonal variations in road fatalities can thus be very useful to fine-tune measures that aim to increase the safety of vulnerable road users. Such measures may encompass a wide range of actions, from education and awareness-raising to infrastructure design and minimum vehicle safety standards through better enforcement of traffic rules.

Today, when fresh efforts are needed to further improve the EU's road-safety records, any progress achieved in the safety of vulnerable road users will have a significant impact. However, this remains a common challenge where decision-makers, road managers and road users share the responsibility of creating a safe mobility system.







For more information about the European Commission
and road safety, visit our website:

<http://ec.europa.eu/roadsafety>

