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#### A Common Methodology for the Collection of Key Performance Indicators for Road Safety in the EU

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# Introduction

> Road crashes are one of the leading causes of death worldwide

- Compared to the global situation, Europe is showing a relatively better performance, with 42 road fatalities per million population in 2020
- The EC has put forward a new approach to EU road safety policy for the decade 2021-2030, highlighting also the need of establishing a range of road safety KPIs at European level
- KPIs are directly related to the prevention of road accident fatalities and serious injuries
- Baseline project aims to:
  - assist authorities of EU Member States in the collection and harmonized reporting of KPIs for road safety and
  - contribute to building the capacity of those MS that have not yet collected the relevant data







# **Objectives and Methodology**

- The objective of this research is to present the common methodological framework for collecting data for the estimation of comparable KPIs at EU level
- A survey among the MS was conducted on existing data collection methods and their needs for methodological support
- International guidelines and methodologies available in the literature were exploited
- For the development of the methodological guidelines a KPI Expert Groups (KEG) and a Technical Committee were established
- The methodological guidelines include recommendations concerning the data collection and the statistical analysis of the data for the calculation of the KPIs





Available at: <u>https://baseline.vias.be/en/</u>

# **EU Key Performance Indicators**

KPI area	KPI definition (European Commission 2019)
Speed	Percentage of vehicles travelling within the speed limit
Safety belt	Percentage of vehicle occupants using the safety belt or child restraint system correctly
Protective equipment	Percentage of riders of PTWs and bicycles wearing a protective helmet
Alcohol	Percentage of drivers driving within the legal limit for blood alcohol content (BAC)
Distraction	Percentage of drivers not using a handheld mobile device
Vehicle Safety	Percentage of passenger cars with a Euro NCAP safety rating equal or above a threshold
Infrastructure	Percentage of distance driven over roads with a rating above an agreed threshold
Post-crash care	Time elapsed between the emergency call following a collision resulting in personal injury and the arrival at the scene of the collision of the emergency services

Measurements for most KPIs will take place in autumn 2021

KPIs for EU Member States are expected to be published up to July 2022



# Speeding

Data collection means: inductive loop detectors, radar sensors, video-based software tools, manual observation by measuring devices

#### Minimum requirements:

- ➢ free flowing traffic
- driving under normal conditions (e.g. no adverse weather)
- random selection of observation locations; a representative sample for the national road network
- measurements on late spring and early autumn
- Temporal variations (weekdays/ weekends) and comparisons between day and night are recommended
- > The national KPIs will be estimated separately by:
  - Vehicle type (personal cars)
  - Road type (motorways, rural roads, urban roads)
  - Time period (daytime on weekdays)



#### Use of safety belts and child restraint systems

- Data collection means: visual observations by trained observers or cameras
- Spatial distribution of census points along different road types in different regions; determination of proper sample sizes
- Separate results for passenger car front and rear occupants
- Data for occupants of light goods vehicles (LGV/vans) and heavy goods vehicles (HGV/lorries) are also recommended
- Gender and age group of occupants are also recommended
- The national KPIs will be estimated separately by:
  - Road type (motorways, rural roads, urban roads)
  - Vehicle type (if applicable)
  - Front vs rear occupant
  - Time period (weekday vs weekend)



# Helmet wearing

- KPI on helmet use while riding on a PTW includes riders and passengers of motorcycles and mopeds
- KPI on helmet use while cycling includes riders and passengers of bicycles and power-assisted bicycles
- Data collection means: direct observations by trained observers; use of cameras alternatively
- Data collection should be carried out during late spring or early autumn, on week days and weekends separately
- Observations should cover the whole daytime and be conducted under reasonable good weather
- The national KPIs (separately for PTWs and cyclists) will be estimated by:
  - Road type (motorways (motorcycles), rural roads, urban roads)
  - Time period (week vs weekend)



# Driving under the influence of alcohol

#### > Three types of **data collection**:

- Random breath testing
- Breath testing results from enforcement actions (even if not random)
- Self-reported behaviour through anonymous surveys
- Random testing is preferred, however it is not allowed in some EU Member States
- During a roadside survey, drivers are sampled randomly; the selection is irrespective of possible suspicion for DUI
- Separate results are required for night hours and day time hours as well as for weekdays and weekend days
- Driver's age and gender as well as trip characteristics can optionally be observed
- The national KPIs will be estimated by:
  - Road type (motorways, rural roads, urban roads)
  - Time period (night/day x week/weekend)



# Distraction

Data collection means: observational roadside surveys by trained observers

- The minimum target groups are passenger car drivers; optionally drivers of light goods vehicles and buses/coaches
- The selection of locations should be as random as possible, covering the geographical area of the country
- Additional driver characteristics are also suggested to be collected, i.e. driver gender and age category
- Observation sessions should be planned at mixed time intervals during daylight hours of normal working days
- The national KPIs will be estimated by:
  Road type (motorways, rural roads, urban roads)



## Vehicle safety

KPI definition: percentage of new passenger cars with a Euro NCAP safety rating equal or above a predefined threshold

As to the safety threshold, two thresholds are suggested:
 a 'soft' threshold, corresponding with a 4-star rating
 a 'strong' threshold corresponding with a 5-star rating

Data on the fleet of newly registered passenger cars from the national vehicle registries

distribution of the passenger cars by make and model

> Alternative indicators have also been considered:

- "the average age of the total fleet of car passengers"
- "the percentage of the passenger cars that are roadworthy"



### Infrastructure

- Prime KPI definition: "the percentage of the distance driven over roads with a safety rating above an agreed threshold"
- > In absence of exposure data, road length could be used as a proxy
- Three types of safety rating methods are proposed:
  - infrastructure based methods;
  - crash based methods;
  - a combination of the aforementioned methods
- A simplified version of the KPI (no rating methodology included): "percentage of the distance driven over roads either with opposite traffic separation (by barrier or area) or with a speed limit equal to or lower than xx km/h in relation to total distance travelled"
- Three speed limit thresholds are proposed based on road type:
  - ➢ 30km/h
  - ➢ 50km/h
  - 70km/h



### Post-crash care

The collection of all emergency calls related to road traffic crashes from a central national database is preferred

- Otherwise, a representative sample of responses to emergency calls in relation to road traffic crashes should be collected
- For the calculation of the KPI, the identification of the time of the emergency call and of the time of arrival of the emergency service are needed
- The KPI is expected to be calculated for 2019 or the year with the latest available data
- A breakdown by road type (motorways, rural, urban roads) is also recommended



### Conclusions

The common methodological framework will allow the collection of representative and comparable KPIs among the EU countries

- This will constitute the basis for setting targets for the KPIs and monitoring and evaluating progress in road safety at national and EU level over the decade 2021-2030
- Systematic collection of KPIs in the future will contribute to a better evaluation of the road safety performance and progress made over time
- KPI data in higher detail should be collected at EU level, so that more critical and hidden road safety properties are revealed and more appropriate solutions are identified





# Thank you for your attention!

# Further info at: <u>BASELINE@vias.be</u>

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