Towards the 12 voluntary global targets for road safety

Guidance for countries on activities and measures to achieve the voluntary global road safety performance targets

GLOBAL ROAD SAFETY PARTNERSHIP

VIAS institute

Foreword

The voluntary global performance targets for road safety risk factors and service delivery mechanisms are a means to enable countries to monitor and report on progress on road safety efforts. This timely document provides guidance to countries on how to operationalize and utilize these targets. It spells out what type of activities need to be undertaken, what data sources can be used and how performance can be measured and presented. It defines each target and points out what actions need to be taken and how each target can be measured.

I hope that this document will be a vital resource for countries to use as they implement road safety measures. The authors are congratulated for excellent work.

Dr Etienne Krug
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This document acts as a guide to assist countries to monitor and report on the 12 Voluntary Global Road Safety Performance Targets, on which a consensus had been reached during a meeting of WHO Member States held in November 2017 in Geneva, Switzerland.

This document has been developed by several members of the United Nations Road Safety Collaboration (UNRSC). Co-ordination was provided by Wouter Van den Berghe from Vias institute (formerly called BRSI-Belgian Road Safety Institute) and Judy Fleiter from the Global Road Safety Partnership. Main authors of this document were Wouter Van den Berghe (Vias Institute), Dave Cliff and Judy Fleiter (Global Road Safety Partnership) with contributions from Rob McInerney (iRAP), Nhan Tran, Teri Reynolds, Pryanka Reylan and Meleckidzedeck Khayesi (World Health Organization), Margie Peden (The George Institute), Adnan Hyder and Nino Paichadze (Milken Institute School of Public Health, George Washington University), Adrian Walsh (RoadSafe), Michael Tziotis (ARRB), Susanna Zammataro (International Road Federation), Robert Nowak, Edoardo Gianotti, and Francois E. Guichard (United Nations Economic Commision for Europe).

The document describes the need for global targets; how national-level target setting and monitoring can assist with monitoring the global targets; and importantly, how countries can start or continue the process of monitoring their own road safety performance to improve the safety of their citizens. This document is not exhaustive and aims to provide examples of how each of the 12 targets could be monitored at national, regional and global level. It should be seen as a starting point.

A second document is planned that will describe relevant sources of information and methodologies to gather data to assist with developing the performance indicators described in this document. As an interim step, until that second document is published, some basic information about information sources is presented in the current document.

Please refer to this document as folliows:

Van den Berghe, W., Fleiter, J.J. & Cliff, D. (2020) *Towards the 12 voluntary global targets for road safety. Guidance for countries on activities and measures to achieve the voluntary global road safety performance targets*. Brussels: Vias institute and Genève: Global Road Safety Partnership

Contents

Part 1

Using indicators and targets to monitor road safety performance

Why safety performance targets are important for improving road safety

According to the World Health Organization's 2018 Global status report on road safety, each year 1.35 million people die as a result of road traffic crashes and as many as 50 million more people are injured. They are the leading cause of death among people aged 5-29 years. Nearly half of the people who die on the world's roads are pedestrians, cyclists and motorcyclists. In addition to the grief and suffering they cause, road traffic crashes constitute an important public health and development problem with significant health and socioeconomic costs.

In order to address these issues, it is crucial to develop, implement and monitor evidence-based road safety policies. Such policies can only be successful when one understands the size of the problem, its characteristics, and the factors that contribute to road crashes. It also requires regular and accurate recording and monitoring of the trends in the numbers of road injuries and fatalities as well as of the main contributing factors (quality of the infrastructure, speeding, safety belt wearing, crashworthiness of vehicles, etc.). Regular collection of such data makes it possible to monitor a set of so-called "Safety Performance Indicators" (SPIs) for road safety – often also referred to with the more general term of "Key Performance Indicators" (KPIs). Without such indicators, policy makers and other stakeholders cannot assess the effectiveness of policies and interventions or identify the measures that still need to be taken.

However, such data collection is challenging. National level assessment of road safety performance is mainly or exclusively based on analysis of police records which often contain only part of the total number of road crashes. But even when such information is accurate and reliable, it only provides a macroscopic view on the safety level and trends of a country.

Many of the best performing countries in road safety have been using a broad set of SPIs that also consider the contributing factors such as the quality of the road infrastructure, the safety technology in vehicles and the behavior of road users. The main purpose of SPIs in such countries is to reflect the current safety conditions of the road system, to measure the influence of various safety interventions, to monitor trends and to make comparisons between different systems (e.g. countries, regions).

Over recent decades, road safety-related data collection has improved, in particular in high income countries – but even in these countries the set of available SPIs may be quite small. In many low and middle income countries, only a few SPIs are available and are often inaccurate. This can hamper the progress of improving road safety in these countries.

Importantly, having SPIs in place is not sufficient. It is also important to define goals and objectives for the reduction of road trauma, as well as for improvements in contributing factors, such as road user behaviors, quality of vehicles, post-crash response, etc. In this document, we will refer to such goals and objectives as "targets", which are preferably quantitative, and as a minimum verifiable.

The importance of setting and monitoring such targets should not be underestimated. Countries and regional or local authorities that have managed to improve road safety have shown that doing so is aided by setting targets and reporting on progress towards those targets. Such processes help in maintaining momentum and implementing effective interventions. Targets and associated indicators provide a means to monitor the extent of progress and provide an opportunity to adjust the focus and scale of road safety interventions to ensure that targets are met.

The emergence of the global targets

International experience, in particular at the level of the European Union, has also illustrated that setting common targets at a supra-national level can be helpful in stimulating individual countries to maintain their road safety efforts. The benchmarking and comparison across countries can place pressure on policy makers and other stakeholders to take appropriate action. An important requirement is that indicators are comparable across countries, i.e. that they are based on the same definitions and methodologies.

Such international and global targets have an important function for the global agenda as well. They serve to raise awareness and reinforce political commitment for stronger and coordinated actions at supranational level, involving all relevant stakeholders for road safety. Global performance targets can also be helpful in assessing progress towards coordinated multi-country initiatives, such as the Decade of Action for Road Safety 2011–2020, the relevant Sustainable Development Goals, actions resulting from inter-ministerial

conferences and other global developments related to the United Nations General Assembly Resolutions relating to road safety.

In order to define such global targets, in May 2016[1] the World Health Assembly (WHA) requested the World Health Organization (WHO), in collaboration with other United Nations agencies, the United Nations regional commissions and the UNRSC, to facilitate a process with all stakeholders to develop voluntary global performance targets on key risk factors and service delivery mechanisms to reduce road traffic fatalities and injuries. Following this request, in 2016-2017 the WHO led a process of developing a set of such global performance targets, involving WHO Member States and key stakeholders. This process culminated in a set of 12 voluntary Global Road Safety Performance Targets and service delivery mechanisms, on which consensus was reached during a meeting of WHO Member States held from 20 to 21 November 2017 in Geneva.

These 12 targets are listed in the table below. Each target represents a specific goal to be achieved at the global level, based on combined efforts of individual countries that wish to contribute to the global objectives. It should be noted that the time horizon for all targets is 2030, except for the first target where it is 2020. The baseline for all targets is 2018. For further easy reference, a short name for each target has been added in the table. These short names will be used throughout this document.

Voluntary global road safety targets		
	Short name	*Full name of the target*
1	***National action plan***	By 2020, all countries establish a comprehensive multisectoral national road safety action plan with time-bound targets.
2	***Global alignment***	By 2030, all countries accede to one or more of the core road safety-related UN legal instruments.
3	***New roads***	By 2030, all new roads achieve technical standards for all road users that take into account road safety, or meet a three star rating or better.
4	***Existing roads***	By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.
5	***Vehicle standards***	By 2030, 100% of new (defined as produced, sold or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.
6	***Speeding***	By 2030, halve the proportion of vehicles travelling over the posted speed limit and achieve a reduction in speed-related injuries and fatalities.
7	***Motorcycle helmets***	By 2030, increase the proportion of motorcycle riders correctly using standard helmets to close to 100%.
8	***Vehicle occupant protection***	By 2030, increase the proportion of motor vehicle occupants using safety belts or standard child restraint systems to close to 100%.
9	***Driving under the influence***	By 2030, halve the number of road traffic injuries and fatalities related to drivers using alcohol, and/or achieve a reduction in those related to other psychoactive substances.
10	***Distraction by mobile phone***	By 2030, all countries have national laws to restrict or prohibit the use of mobile phones while driving.
11	***Professional drivers***	By 2030, all countries to enact regulation for driving time and rest periods for professional drivers, and/or accede to international/regional regulation in this area.
12	***Timely emergency care***	By 2030, all countries establish and achieve national targets in order to minimize the time interval between a road traffic crash and the provision of first professional emergency care.

[1] http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_R7-en.pdf?ua=1

One or more global indicators accompanies each of the 12 global targets. These indicators, 34 in total, are listed in Parts 2 and 3.

What do these targets mean for individual countries?

An important requirement for being able to document and monitor the achievement of the targets is that countries set up adequate national-level processes and data collection mechanisms for the topics. Such data collection processes should have a triple purpose:

(1) to develop and monitor a set of reliable and relevant national road safety performance indicators;
(2) to facilitate comparison and benchmarking across countries and provide inputs to the monitoring of achievement of the targets at the regional and global level;
(3) to assist in developing expertise and enhancing governance of the road safety system.

For many countries the design and implementation of such data collection processes will be a new activity and often a challenging one (see point (3) above). Therefore, a need was identified to provide guidance to countries on what type of activities need to be undertaken, what data sources can be used and how performance can be measured and presented in the form of indicators. Guidance is also needed on the meaning of the terms used in the definitions of the global targets and indicators.

This document was prepared in order to provide such guidance. It is aimed at governments, non-governmental organisations and road safety practitioners that may be involved in the processes to generate, collect, analyse and deliver data for the global targets and/or for the design and implementation of the associated national indicators. For each of the 12 targets, the document provides suggestions on which type of measurements could be undertaken in order to create relevant national indicators, what type of organisations should be responsible for the data collection, and what type of data analysis is needed. This document should be seen as a general guideline, and within its scope it cannot discuss all of this in depth[2].

From actions to impact

Achieving improvements in road safety requires a planned approach. If you want to achieve a certain impact, you need to improve the underlying factors. And that in turn, requires appropriate plans and actions.

For example, if a country aims to reduce the number of injury crashes that result from unsafe roads, then the country will need to set objectives for safer roads and subsequently implement the principles of safe roads design when building new roads and when upgrading existing roads. The results of this process will be safer roads on which fewer crashes occur. This is what global targets number 3 (new roads) and 4 (existing roads) refer to.

This 3-stage logic, which is applicable to any area of road safety, is displayed in Figure 1 – with speeding used as the example in the figure (speeding is the topic of the 6th global target).

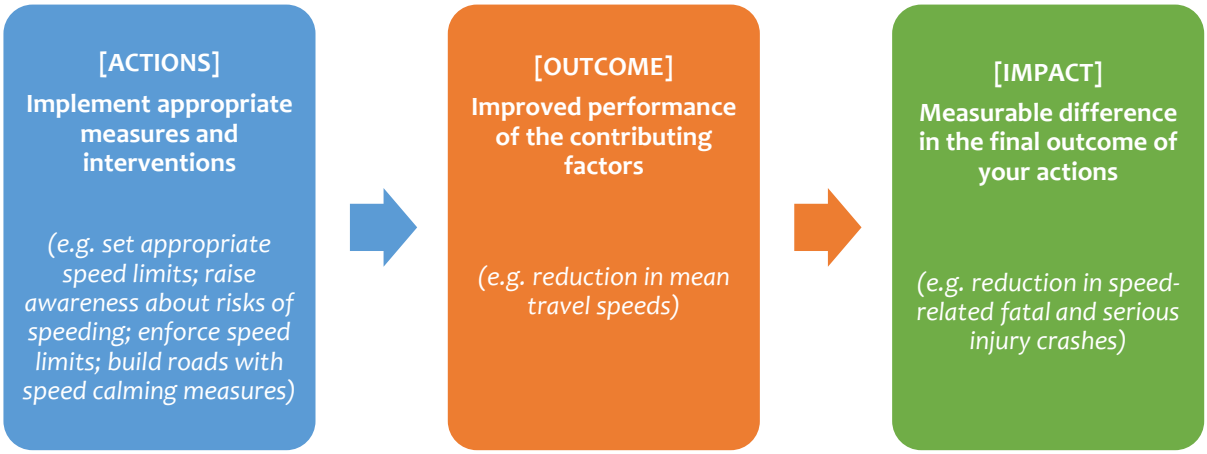

Figure 1. Logic for Action → Outcome → Impact

[2] A document with more information on the methodologies to calculate the indicator values, will be produced at a later stage.

Thus:

- if you want to improve road safety in a particular area *(for example, vehicle occupant protection)*;
- then you need to start with "actions" *(e.g. adequate legislation and law enforcement on safety belts and child restraint systems)*;
- so that you can achieve the required behavior change *(e.g. increasing numbers of vehicle occupants who are appropriately restrained)*;
- and finally obtain the desired impact *(e.g. fewer injuries and fatalities due to non-restrained vehicle occupants)*.

This logic – "**Action → Outcome → Impact**" – applies to all areas of road safety. We will refer to these 3 different steps as "stages" and label these as:

1. **Actions**: design of plans, standards, policies, etc. and implementation and enforcement of these, including supportive information and awareness raising activities.
2. **Outcome**: the intended and expected results if the Actions stage is appropriately implemented.
3. **Impact** on road safety: the reduction in number of injuries and fatalities that are caused by a particular factor (e.g. unsafe roads, lack of wearing helmets, etc.).

Of course, improving road safety will require action to address all areas covered by the 12 targets, not just one. The reduction of injuries is the result of the interaction of many different measures. For instance, even the best road infrastructure cannot save lives if drivers continue to drink and drive. So don't just work on safe roads, but also take countermeasures against drunk driving.

Positioning the 12 global targets on the three stages

In principle, targets can be set at any of these 3 stages. This also applies to the global targets and global indicators. In the table below we illustrate where each of the 12 global targets fits within the three stages. The table illustrates that some of the targets refer to Stage 1 (Actions), some to Stage 2 (Outcome) and some to Stage 3 (Impact).

		1. Actions	2. Outcome	3. Impact
1	***National action plan***	By 2020, all countries establish a comprehensive multisectoral national road safety action plan with time-bound targets.		
2	***Global alignment***	By 2030, all countries accede to one or more of the core road safety-related UN legal instruments.		
3	***New roads***		By 2030, all new roads achieve technical standards for all road users that take into account road safety, or meet a three star rating or better	
4	***Existing roads***		By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.	
5	***Vehicle standards***		By 2030, 100% of new (defined as produced, sold or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.	
6	***Speeding***		By 2030, halve the proportion of vehicles travelling over the posted speed limit.	By 2030 achieve a reduction in speed-related injuries and fatalities

		1. Actions	2. Outcome	3. Impact
7	*Motor-cycle helmets*		By 2030, increase the proportion of motor-cycle riders correctly using standard hel-mets to close to 100%.	
8	*Vehicle occupant protect-ion*		By 2030, increase the proportion of motor vehicle occupants using safety belts or standard child restraint systems to close to 100%.	
9	*Driving under the influence*			By 2030, halve the number of road traffic injuries and fatalities related to drivers using alcohol, and/or achieve a reduction in those related to other psychoactive substances.
10	*Distract-ion by mobile phone*	By 2030, all countries have na-tional laws to restrict or prohibit the use of mobile phones while driving.		
11	*Profes-sional drivers*	By 2030, all countries to enact regulation for driving time and rest periods for professional drivers, and/or accede to inter-national/regional regulation in this area.		
12	*Timely emer-gency care*		By 2030, all countries establish and achieve national targets in order to minimize the time interval between a road traffic crash and the provision of first professional emergency care	

Similarly, indicators to be developed at national level could be set at any of the three stages. Part 2 of this document will provide more detailed information on what "Actions", "Outcome", and "Impact" can actu-ally mean, and will also illustrate the types of measurements that could be undertaken to create national indicators. Part 3 of this document provides summary tables, allowing for comparisons of Actions, Results and Impact across different areas.

Data collection for national-level indicators

Data for national-level indicators (and thus ultimately for the global targets) needs to be collected in different ways, depending on the methodology used for each indicator, the data sources available and the desired level of accuracy. Information relating to this for each target is provided in Part 2 of this document. In this section, we give some general remarks about the different types of data collection required.

- For some indicators, particularly those relating to the existence of legislation, processes and plans, the 'calculation' to be undertaken is straightforward: it comes down to the observation (by an authority) that the particular legislation, process or plans are in place. In Part 2 of this document, we will call this method "**official statement**". This approach is similar to some of the data collected for the WHO Global Status Report on Road Safety.
- For other indicators, reliable data might already be available in **databases** (Ministry of Transport, Ministry of Road Infrastructure, Police, Ministry of Health, Road Safety Lead Agency) and obtaining the infor-mation is a matter of appropriate data extraction and analysis. This may not always be straightforward, in particular when the data are scattered across several databases and/or when the data were originally collected for other purposes.
- Many indicators in relation to road user behavior will require that **surveys** are undertaken. Three main types of surveys can be conducted: (1) observational surveys, such as road side surveys (manned or au-tomated); (2) analysing data generated by in-vehicle devices, tracing systems or mobile phones; and (3)

road user questionnaires, in which road users report on their behavior. All methods have advantages and disadvantages. In all surveys, care must be taken to identify a representative sample, and consistency of data collection across time must be assured, in order to be able to record meaningful trends.

- Indicators in relation to enforcement might be based on **police** records or on the frequency of police checks reported by road users.

Whilst several high income countries already have considerable experience in this regard – even when it comes to international comparability – it is recognised that not a single country has all the tools and systems in place to immediately provide all the data for all the indicators from 2018 onwards.

For many countries, several of the surveys needed to report against the indicators will be new. There are some methodological challenges (especially for roadside surveys) and the costs of such surveys can be expensive. They also often require the cooperation of several stakeholders such as the police, local authorities and the groups targeted. This applies particularly to behavioral measurements (speeding, driving under the influence, use of safety belts, etc.). A cost-efficient alternative (or complement) is the construction of indicators (and targets) based on self-reported behavior. This method has been successfully applied within the SARTRE surveys in Europe and is now covered by ESRA (E-Survey of Road Users' Attitudes, www.esranet.eu), which already has data for over 60 countries. For this reason, some national indicators have been included that can be based on such surveys.

Further breakdowns and segmentation of national indicators

The measurements and indicators that are proposed in Part 2 of this document apply to the whole population of a country, or to a particular group of road users (e.g. car drivers, motorcyclists). The indicator values obtained are a first step for analysing and monitoring road safety performance.

But for most of these indicators it can also be useful to make further breakdowns and segmentation of the values. For instance, indicators for safety belt use may differentiate between cars, light trucks, and heavy vehicles – and within cars between the driver, the front passenger and the rear passengers. When analysing drunk driving, it is useful to break down the data by age groups and gender. It may also be useful (and necessary for policy reasons) to calculate the values at (subnational) regional levels. In some cases, indicator values may only be available at subnational level and may need to be aggregated or extrapolated to the national level, by using appropriate weighting factors.

This type of additional segmentation is also needed to make international comparisons meaningful. For instance, suppose that in one country, only the prevalence of the driver safety belt wearing is measured, but in another country, safety belt use by all car occupants is assessed. In such cases, the indicator values are not comparable.

The table below lists the type of segmentations that might be used for the indicators that are linked to each of the 12 targets.

	Targets	Possible further segmentation
1	**National action plan**	• By region/state within the country (for countries where decision-making on road safety takes mainly place at subnational level)
2	**Global alignment**	• *[Not applicable]*
3	**New roads**	• By region/state/area within the country • By type of road or road infrastructure (urban, rural, primary-secondary-tertiary, motorway/freeway, intersections-interchanges, tunnels, bridges, …)
4	**Existing roads**	• By region/state/area within the country • By type of road or road infrastructure (urban, rural, primary-secondary-tertiary, motorway/freeway, intersections-interchanges, tunnels, bridges, …)
5	**Vehicles**	• By type of vehicle (car, van, truck, bus, bicycle, moped..) • By type of two- or three wheeler (bicycle, moped, motorcycle, …) • By age (new vs. second hand vs. old-timers) • By category of use and of roads (off road, agricultural public road etc.) • By mass and dimensions

	Targets	Possible further segmentation
6	**Speeding**	• By region/state/area within the country (for countries where speed limits may vary) • By type of road (urban, rural (with different speed regimes), motorways, school zones, …) • By type of vehicle (car, truck, bus, motorcycle, moped, e-bike, …) • By gender & age category
7	**Motorcycle helmets**	• By region/state/area within the country (for countries where helmet laws may vary) • By type of PTW (motorcycle, moped, motorised three-wheeler, e-bike, …) • By role (rider, pillion passenger) • By gender & age category
8	**Vehicle occupant protection**	• By region/state/area within the country (for countries where safety belt laws may vary) • By type of vehicle (car, light truck, bus, truck, …) • By role (driver, front seat passenger, back seat passenger, child passenger) • By gender & age category • By presence of airbags or other restraint systems • By presence of ISOFIX or similar anchorages to prevent misuse of child restraint systems
9	**Driving under the influence**	• By region/state/area within the country (for countries where DUI laws may vary) • By type of substance (alcohol, cannabis, cocaine, …) • By type of vehicle driver (car, light truck, bus, truck, motorcycle, moped, e-bike, bicycle, …) • By type of road (urban, rural (with different speed regimes), motorways, school zones, …) • By gender & age category
10	**Distraction by mobile phone**	• By region/state/area within the country (for countries where mobile phones laws may vary) • By type of vehicle driver (car, light truck, bus, truck, motorcycle, moped, e-bike, bicycle, …) or pedestrian • By type of road (urban, rural (with different speed regimes), motorways, school zones, …) • By gender & age category
11	**Professional drivers**	• By type of vehicle driver (bus, truck, light truck, taxi, tuk tuk, …) • By gender & age category • By nationality/country of residence
12	**Timely emergency care**	• By region/state/area within the country • By density level of area

In summary

In order to improve road safety globally, 12 voluntary global targets have been defined and the achievement of these targets will be monitored over the next decade.

Achieving these targets will require data collection and analysis by each Member State for each of the 12 target areas. Three phases have been identified, for which national indicators can be defined and targets can be set:

1. **Actions**: design of plans, standards, policies, etc. and implementation and enforcement of these, including supportive information and awareness raising activities.
2. **Outcome**: the intended and expected results of the Actions phase: e.g. (depending on the topic) complying with speed limits, better vehicle safety, improved infrastructure safety, less driving under the influence, timely emergency care service, etc.)
3. **Impact** on road safety: the reduction in number of injuries and fatalities that are caused by a particular factor (e.g. unsafe roads, failure to wear helmets, etc.)

Part 2 of this document provides more information for each of the 12 areas. Part 3 includes a series of summary tables.

Figure 2. Summary of the key elements contained in this document

Part 2

The link between the global voluntary targets and activities at national level

This part discusses briefly each of the 12 areas covered by the global targets. Each area is discussed in a separate section, so one can jump immediately to the section(s) that are of most interest.

Each section has the same structure:

- *a reminder of the global target and the associated global indicators*
- *an explanation of the terminology used*
- *an overview of the 3 stages (Actions – Outcome – Impact) including:*
  - *the elements that are most relevant (most of which refer directly to the global targets and indicators)*
  - *the type of measurements and indicators that could be considered*
  - *the sources of data that are needed for the measurement*
  - *the method that can be used to calculate the indicators (very simplified - more detailed methodological advice for measuring and assessing indicators will be available in another document)*
- *further resources where more information on the topic can be found.*

Target 1 - National action plan

The global target and associated indicators

The global target and associated indicators in relation to Target 1 (National action plan) are:

By 2020, all countries establish a comprehensive multisectoral national road safety action plan with time-bound targets.

Associated global indicators:

1.1. Number of countries with a published national action plan with regularly updated time-bound targets for reductions in fatalities and injuries.

1.2. Number of countries that have a national lead agency to coordinate, monitor, evaluate and implement the multi-sectoral national road safety action plan.

The table below includes some information about the terms used in the target and indicators

Terms	Explanation
Comprehensive [action plan]	[An action plan] of broad scope with objectives, targets, planned interventions, expected outcome as well as responsibilities for interventions and reaching the targets.
Coordinate	Lead and ensure that all those involved in delivery work towards a common and agreed aim. Coordination of road safety efforts across multiple sectors and stakeholders is critical for success. In several countries this role is fulfilled by a lead agency that should ideally have the authority and resources needed to coordinate the implementation of a national strategy.
Evaluate	Have in place a scientifically based system to measure the effectiveness of specific interventions by their contribution to the reduction of fatalities and injuries, as well as changes in behavior, attitudes and knowledge. Determining the aims of evaluation, type of evaluation and indicators to adopt during the planning phase of a program will improve the ultimate quality of the evaluation.
Fatalities	Deaths which results from an injury caused by a traffic collision. There are wide variations across the world with some defining a fatality as death at the scene and others defining it as a death within 30 days of a collision. A widely agreed definition is: Human casualties who sustained injuries which caused death less than 30 days after the incident.
Injuries	As agreed in WHO definitions: a serious injury is an injury for which a person is detained in hospital as an "in-patient", or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushings, burns (excluding friction burns), severe cuts, severe general shock requiring medical treatment and injuries causing death 30 or more days after the collision. A slight injury is an injury of a minor character such as a sprain (including neck whiplash injury), bruise or cut which are not judged to be severe, or slight shock requiring roadside attention. This definition includes injuries not requiring medical treatment.

	An injured casualty is recorded as seriously or slightly injured by the police on the basis of information available within a short time of the crash. This generally will not reflect the results of a medical examination, but may be influenced according to whether the casualty is hospitalised or not. Hospitalisation procedures will vary regionally. In recent years, some countries have been transitioning towards an injury scale, based on the MAIS-score (Maximum Abbreviated Injury Scale) which can take values from 1 to 6, and where 6 is a fatal injury. MAIS scores of 3, 4, 5 and 6 are considered as serious injuries.
Lead agency [for road safety]	The government department or public agency responsible for the development, implementation and evaluation of the road safety action plan.
Monitor	Continuously observe and asses the progress and success of the overall plan. This requires sufficient dedicated resources and the design and implementation of a monitoring and evaluation system that incorporates the performance indicators and targets.
Multisectoral [action plan]	This will include government departments, public sector organisations and civil society as well as private sector organisations especially those involved in transport of both people and goods.
National	Although many action plans are national, it may well be that governmental structures require plans to be regional or state based.
Road safety action plan	Achieving sustained reductions in road traffic injuries requires road safety decision-makers and practitioners to have a long-term vision and strategy for road safety in their country, and to define the objectives to be attained within the time period of the strategy. The action plan assigns responsibilities targets, planned outcome and the allocation of resources to deliver. The plan should specify data collection and analysis methods, dissemination channels and a framework for utilisation of the results to adjust road safety activities.
Time bound targets	Usually phrased as specific actions to be completed by a specified date measured in terms of changes in behavior or reductions in casualties.
Implement	Bringing a plan into action.

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:

(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	A national action plan for road safety with time-bound targets (*) Nominantion of a lead agency by government Implementation of the national action plan Regular update of the targets (*) Operation of the lead agency (*)	Publication of a national action plan for road safety with targets (*)	Ministry of Transport or lead agency	Publication of the plan
		Establishment of a lead agency	Prime Minister Ministry of Transport	Official statement
		Proportion of interventions that have been or are being implemented on time	Lead agency (or other agency or Ministry of no lead agency exists)	Various methods (depending on the intervention)
		Number of years between updates of the targets (*)	Lead agency	Official statement
		Budget of the lead agency (*)	Lead agency	Official statement
Outcome	The interventions foreseen in the national plan are achieved The targets listed in the national plan are achieved	Proportion of interventions that have been implemented successfully	Lead agency	Assessment study
		Proportion of targets in the national plan that have been achieved	Lead agency	Various methods (depending on the target)
Impact	Reduction of the negative impact of the contributing factors Overall reduction in road injuries and fatalities	Number of road injuries and fatalities	Statistics on road injuries and fatalities (in general collected by the police)	Sums of the number of road injuries and fatalities
		Relative number of road injuries and fatalities, taking into account population and exposure	Statistics on road injuries and fatalities (in general collected by the police)	Division of the number of road injuries and fatalities by unit of exposure or population

Further resources on road safety management

- The World Bank Global Road Safety Facility (Tony Bliss & Jeanne Breen, 2009) – Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects (http://siteresources.worldbank.org/EXTTOPGLOROASAF/Resources/traffic_injury_prevention.pdf)
- World Bank Capacity Review guidelines - https://www.worldbank.org/en/topic/transport/publication/road-safety-management-capacity-review-guidelines
- ERSO (European Road Safety Observatory) - Synthesis on Road Safety Management (2018) (ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/ersosynthesis2018-roadsafetymanagement.pdf)
- IRF – Global Transport Knowledge Practice (GTKP) – Road Safety Management Resource (https://www.gtkp.com/index.php?id=16&themepgid=368)
- GRSF (Global Road Safety Facility) Road Safety management (hosted on gtpk: https://www.gtkp.com/index.php?id=16&themepgid=368)
- IATSS Research (Bliss & Breen, 2012) – Meeting the management challenges of the Decade of Action for Road Safety (doi.org/10.1016/j.iatssr.2011.12.001)
- PIARC - https://roadsafety.piarc.org/en/road-safety-management

Target 2 - Global alignment

The global target and associated indicator

The global target and associated indicators in relation to Target 2 (Global alignment) are:

By 2030, all countries accede to one or more of the core road safety-related UN legal instruments.

Associated global indicators:

2.1 *Number of countries that have ratified or acceded to one or more of the core road safety-related UN legal instruments*

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Accede to	Accession is an act by which a State signifies its agreement to be legally bound by the terms of a particular treaty. It has the same legal effect as ratification, but is not preceded by an act of signature.
Ratify	Ratification is an act by which a State signifies an agreement to be legally bound by the terms of a particular treaty. To ratify a treaty, the State first signs it and then fulfils its own national legislative requirements.
UN legal instruments	This refers to the following agreements and conventions: • 1949 Convention on road traffic • 1968 Convention on road traffic • 1968 Convention on road signs and signals • 1958 Agreement on UN Regulations for vehicle type-approval *This Agreement is inoperative without the transposition of a minimum number of UN Regulations annexed to it into the national legislation of the Contracting Party. UN suggests: UN Regulations Nos. 94 and 95 (front and side impact protection); UN Regulation No. 140 (Electronic stability control (ESC)); UN Regulation No. 127 (Pedestrian safety); UN Regulation No. 16 and 14 (Safety-belts and safety-belt anchorages); UN Regulations Nos. 44 or 129 (Child Restraint Systems) and UN Regulation No. [145] (ISOFIX anchorage systems, ISOFIX top tether anchorages and i-Size seating positions); UN Regulation No. 78 (Motorcycle braking); UN Regulation No. 22 (Protective helmets);); UN Regulation No. [100 or new]*[3] • 1997 Agreement on periodic technical inspection *The Agreement is inoperative without the transposition of the UN Rule No. 2 (Roadworthiness) into the national legislation of the Contracting Party*

[3] In the next decade a massive deployment of electric vehicles is expected. Hence, a UN Regulation ensuring minimum safety shall be included. At the moment it remains UN Regulation No. 100 but it may be replaced by a new one.

	• 1998 Agreement on UN Global Technical Regulations on vehicle construction *The Agreement is inoperative without the transposition of a minimum number of UN GTRs into the national legislation of the Contracting Party. UN suggests: UN GTR No. 9 (Pedestrian safety); UN GTR No. 8 (ESC); UN GTR No.3 (Motorcycle braking); UN GTR No. 20* [4]. • 1957 Agreement on transport of dangerous goods by road (ADR)

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:
(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Ratification or accession of Agreements and Conventions (*)	Number of Agreements and Conventions which have been ratified or acceded to (*)	Ministry of Foreign Affairs	Official statement
Outcome	The Agreements and Conventions are fully implemented at national level	Number of ratifed/acceded to Agreements which have been fully implemented at national level	Ministry of Foreign Affairs Other relevant ministries	Official statement
Impact	Reduction of the negative impact of the contributing factors	Number of road injuries and fatalities	Statistics on road injuries and fatalities (in general collected by the police)	Sums of the number of road injuries and fatalities
	Overall reduction in road injuries and fatalities	Relative number of road injuries and fatalities, taking into account population and exposure	Statistics on road injuries and fatalities (in general collected by the police)	Division of the number of road injuries and fatalities by unit of exposure or population

[4] Since in the next decade there would be a massive deployment of Electric Vehicles UN GTR No. 20 ensuring minimum safety shall be included.

Further resources on UN Agreements

- UN "What is the difference between signing, ratification and accession of UN treaties?" (http://ask.un.org/faq/14594)
- UNECE Summary List of International UNECE Transport Agreements and conventions (http://www.unece.org/trans/conventn/legalinst.html)
- UNECE Introduction to United Nations Road Safety Conventions (http://www.unece.org/trans/roadsafe/introduction_road_safety_conventions.html)
- International Road Traffic and Road Signs and Signals Agreements and Conventions (http://www.unece.org/index.php?id=26749)
- UNECE Best practices on road traffic and road signs and signals (http://www.unece.org/trans/roadsafe/rsrec.html-
- Text of the 1958 Agreement for vehicle type-approval (http://www.unece.org/trans/main/wp29/wp29regs.html)
- Text of the 1997 Agreement on periodic technical inspection of vehicles (http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp291997.html)
- Text of the 1998 Agreement on UN Global Technical Regulations (http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29glob.html)
- Info and text of the 1957 Agreement concerning the international carriage of dangerous goods by road (ADR) (http://www.unece.org/trans/danger/danger.html & http://www.unece.org/trans/danger/publi/adr/adr_agreement.html)
- Sustainable Mobility for All. International Agreements to Achieve Sustainable Mobility (http://www.sum4all.org/key-products/review-international-agreements-conventions-and-other-instruments-achieve-sustainable)

Target 3 - New roads

The global target and associated indicators

The global target and associated indicators in relation to new roads are:

By 2030, all new roads achieve technical standards for all road users that take into account road safety, or meet a three star rating or better.

Associated global indicators:

3.1 Number of countries that have implemented technical standards for new roads that take into account the safety of all road users, or that are aligned with the relevant UN Conventions and regulate compliance to those standards

3.2 Number of countries using systematic approaches to assess/audit new roads

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Assess [new roads]	The assessment of the proposed road design, *either* using the Star Rating for Designs tool developed by iRAP and the World Bank with associated reporting of safety performance for all relevant road users, or the use of equivalent nationally recognised tools to assess safety for all road users. Provisions for vulnerable road users must be included, e.g. impact of attenuating devices to protect motorcyclists from guardrail posts; protection and separation of pedestrians with sidewalks and safe crossings and dedicated bicycle lanes.
Audit [new roads]	A Road Safety Audit is an independent review of a new road to identify potential safety problems that may increase the incidence or severity of road crashes affecting all road users. Road Safety Audits are intended to identify road safety problems early in the life of a project to ensure that safety problems are identified and addressed both before the works are implemented and after construction. It should also be noted that a Road Safety Audit is not a check against design standards (https://roadsafety.piarc.org/en/planning-design-operation-risks-issue-identification/proactive-identification).
Compliance to standards	Compliance *of* the national technical standards to international standards, such as the UN Conventions and other legal instruments administered by UN regional commissions, related iRAP global specifications, or similar.
Implement technical standards	National technical standards that specify minimum safety requirements for each road user and/or safe road design specifications that are implemented across all road agencies in a country. The standards shall specify the outcome or the necessary road features that are required to provide minimum safety levels for all road users, when and where they shall be applied and how they must be designed.
New roads	New roads are brand new road sections where no previous road exists and/or roads where major upgrades are occurring.
Relevant UN Conventions	The United Nations legal instruments include the Convention on Road Traffic and the Convention on Road Signs and Signals that seek to harmonise traffic rules and systems of road signs, signals and road markings. Regional UN standards include the UNESCAP Asian Highway Design Standards for Road Safety that support the target for new roads to meet a three-star rating or better and the European Agreement on Main International Traffic Arteries (AGR)-.

Road users	All road users present or expected to be present on the section of road over the life of the new or upgraded road. This shall consider, but not be limited to, pedestrians, cyclists, personal mobility devices, motorcyclists and vehicle occupants including those in cars, buses and heavy vehicles.
Safety	The protection of an individual from death or injury and the minimisation of risk of harm.
Systematic approaches	Established systems that include organisational structures, accountabilities, policies, standards and procedures that cover the approval, financing, design, operation and maintenance of new roads.
Three star rating	The iRAP Star Rating Standard measures the safety performance of a road section. This rating is specified globally by Governments, Development Banks and UN agencies and is defined for each road user including pedestrians, cyclists, motorcyclists and vehicle occupants. One-star is the least safe, three-star is deemed the minimum desired level for new roads and five-star is the safest. The iRAP star rating is governed by an independent Global Technical Committee.

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:

(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Appropriate technical standards (three star or equivalent) for new roads (*) Use of these standards in the design and build of new roads (*) Use of a systematic approach for	Existence of policies specifying the safety level (e.g. Star Rating) for new roads (*)	Ministries responsible for road infrastructure National RAP Programme, iRAP or others	Official statement Direct reference to iRAP Standards for new roads
		Existence of appropriate technical standards for all road users that take into account safety for new roads (*)	Ministries responsible for road infrastructure	Official statement
		Existence of a road safety audit guide or manual for the conduct of road safety audits for new roads	Ministries responsible for road infrastructure	Official statement

	undertaking preliminary/detailed road safety design audits of new roads (*)	% of km of new roads which are designed and built according to the technical standards (*)	Ministries responsible for road infrastructure National RAP Programme, iRAP or others	Calculation of proportion
		% of km of new roads where a road safety audit (preliminary/detailed design stage) has been conducted and safety issues identified are addressed (*)	Ministries responsible for road infrastructure National RAP Programme, iRAP or others	Calculation of proportion
Outcome	New roads are safer for all road user groups (three star level or better)	% of km of new roads which meet the three-star or better standard for all road users	Ministries responsible for road infrastructure National RAP Programme, iRAP or others	Calculation of proportion
		% of road users (e.g. pedestrians, cyclists, motorcyclists and vehicle occupants) who consider that the new roads are safe	Pedestrians, cyclists, motorcyclist and vehicle occupants	Survey amongst a representative sample of all road users (e.g. pedestrians, cyclists, motorcyclists and vehicle occupants)
Impact	Reduction of road injuries and fatalities on new roads, compared to existing roads	Relative performance in terms of road injuries and fatalities of new roads compared to existing roads, taking into account exposure	Statistics on road injuries and fatalities (in general collected by the police)	Comparison (per unit of exposure) of number of road injuries and fatalities between new roads and existing roads of a similar type
		Achievement of fatality rates per kilometre and per kilometre travelled on the new road that are lower than specified targets (e.g. specific rates; IRTAD data; iRAP Risk Mapping categories; IRF World Road Statistics).	Ministries responsible for road infrastructure National RAP Programme, iRAP, IFR World Road Statistics or others	Monitoring of crash rates 1, 3 and 5 years after contruction

Further resources on safety of new roads

- iRAP Star rating system (https://www.irap.org/3-star-or-better/)
- PIARC Road Safety Manual (https://roadsafety.piarc.org/)
- UN Road Safety Collaboration Ten Steps for Safer Infrastructure (https://resources.irap.org/General/UNRSF_10STEPS_INFRASTRUCTURE.pdf)
- Tools to support the Star Rating for Designs worldwide (www.irap.org/star-rating-for-designs/)
- iRAP Training and Accreditation for Public and Private-Sector partners and suppliers (https://www.irap.org/training-and-accreditation/)
- Establishing a National Road Assessment Programme (https://www.irap.org/partnering-to-save-lives/regional-raps/
- UNESCAP Asian Highway Standard (https://www.unescap.org/sites/default/files/Main%20Report%20-%201%20May%202017.pdf)
- UNRSC IRF Safer Roads and Mobility knowledge resources hosted on www.gtkp.com (e.g. https://www.gtkp.com/themepage.php&themepgid=370)
- Safer Africa – Assessment of road design standards (http://www.saferafrica.eu/publications)

Target 4 - Existing roads

The global target and associated indicators

The global target and associated indicators in relation to existing roads are:

By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.

Associated global indicators:

4.1 Number of countries that have developed and implement a plan for the improvement of the existing roads that take into account the safety of all road users

4.2 Number of countries using systematic approaches to assess/audit existing roads

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Assess / inspect	A Road Safety Inspection / Assessment is a systematic and independent on-site review of an existing road that aims to identify hazardous conditions, faults and deficiencies that may increase the incidence or severity of road crashes affecting all road users that are required to be addressed.
Audit	A Road Safety Audit is an independent review of a road to identify potential safety problems that may increase the incidence or severity of road crashes affecting all road users. Road Safety Audits are intended to identify road safety problems early in the life of a project to ensure that safety problems are identified and addressed both before the works are implemented and after construction. RSAs should take place also 12 and 36 months after the road scheme has opened.
Existing roads	The road network in a country that facilitates the movements of people and freight by all modes including but not limited to walking, bicycles, motorcycles or vehicles including cars, buses and heavy vehicles.
Plan for improvement	A targeted plan to be implemented with budget and resources that addresses the safety of one or more road users;
Road users	All road users present or expected to be present on the section of road over the life of the new or upgraded road. This shall consider, but not be limited to, pedestrians, cyclists, personal mobility devices, motorcyclists and vehicle occupants including those in cars, buses and heavy vehicles.
Safety	The protection of an individual from death and serious injury and the minimisation of risk of harm.
Systematic approaches	Established systems that include organisational structures, accountabilities, policies, standards and procedures that cover the approval, financing, design, operation and maintenance of existing roads.
Technical standards [for roads]	National technical standards that specify the safety performance for road design features that ensure minimum safety levels for all road users, when and where they shall be applied and how they must be designed. The global iRAP Star Rating Standard can be used to specify minimum star rating standards for each road

	user and where that standard applies. The standards shall also specify the desired outcome (e.g. >75% of travel at the recommended 3-star or better performance for all road users) or the necessary road features to achieve that equivalent outcome for all road users.
Travel	An estimate of the kilometers or miles of travel of that particular road user and where the majority of that usage exists. For example, 75% of travel for pedestrians and cyclists may be in built-up central business districts; shopping and sporting precincts and schools; 75% of travel for motorcycle and vehicle occupants may be on high-volume inter-urban roads and urban arterials and motorways.

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:

(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Appropriate technical standards for existing roads	Existence of appropriate technical standards for all road users that take into account safety for existing roads	Ministries responsible for road infrastructure	Official statement
	A plan for the safety improvement of existing roads (*)	Existence of a road safety inspection/assessment guide or manual for the conduct of road safety inspections/assessments of existing roads	Ministries responsible for road infrastructure	Official statement
	Establish a budget for safer roads	Existence of a road safety audit guide or manual for the conduct of road safety audits	Ministries responsible for road infrastructure	Official statement
	Improvement of existing roads in view of meeting the technical standards (*)	Existence of a nation wide Road Assessment Programme with associated targets for the safety performance of each road user on existing roads.	Ministries responsible for road infrastructure National RAP Programme, iRAP or others	Official statement Direct reference to iRAP Standards for existing roads
	Use a systematic approach for the conduct of road	Existence of a resourced plan for the safety improvement of existing roads	Ministries responsible for road infrastructure	Official plan in place

	safety inspections/ assessments of existing roads or iRAP star ratings (*) Undertake road safety inspections/assessments for existing roads with identified corrective safety work	Existence of a dedicated long-term budget for safer roads that will meet the desired existing road target by 2030	Ministries responsible for road infrastructure	Official budget in place
		% of km of high-risk / one or two-star existing roads that are being improved annually to meet the technical standards for all road users	Ministries responsible for road infrastructure National RAP Programme, iRAP or others	Calculation of proportion
		% of km of existing roads that have undergone a road safety inspection / assessment over a five-year period with appropriate corrective safety treatments implemented	Ministries responsible for road infrastructure National RAP Programme, iRAP or others	Calculation of proportion
Outcome	Improved safety of existing roads	% of travel that is on existing roads that meet a three-star rating or better for all road users	Ministries responsible for road infrastructure National RAP Programme, iRAP or others	Calculation of the % of travel (reports available in free iRAP ViDA software)
		% of road users (e.g. pedestrians, cyslists, motorcyclists and vehicle occupants) who consider that existing roads are safe	Pedestrians, cyclists, motorcyclist and vehicle drivers	Survey amongst pedestrians, cyclists, motorcyclists and vehicle occupants
Impact	Reduction of road crash injuries and fatalities on existing roads	Number of road crash injuries and fatalities on existing roads	Statistics on road injuries and fatalities (in general collected by the police) National RAP Programme, iRAP, IRF WRS or others	The number of road injuries/ fatalities on existing roads Predicted total fatality and serious injuries on existing roads
		Relative performance (before and after) in terms of road injuries and fatalities on existing roads that have been upgraded, taking into account exposure	Statistics on road injuries and fatalities (in general collected by the police) National RAP Programme, iRAP, IRF WRS or others	Relatieve number of road injuries and fatalities on upgraded roads before and after implementation (adjusting for exposure or population)
		Fatality and injury rates per kilometre and per kilometre travelled on existing roads that are lower than specified targets (e.g. specific rates; IRTAD data; iRAP Risk Mapping categories; IFR World Road Statistics)	Statistics on road injuries and fatalities (in general collected by the police) National RAP Programme, iRAP, IRF WRS or others	Monitoring of crash rates

Further resources on safety of existing roads

- iRAP Star rating system (https://www.irap.org/how-we-can-help/)
- PIARC Road Safety Manual (https://roadsafety.piarc.org/en)
- UN Road Safety Collaboration Ten Steps for Safer Infrastructure (https://resources.irap.org/General/UNRSF_10STEPS_INFRASTRUCTURE.pdf)
- Tools to support the Star Rating for Designs worldwide (www.irap.org/star-rating-for-designs/)
- iRAP Training and Accreditation for Public and Private-Sector partners and suppliers (https://www.irap.org/training-and-accreditation/)
- Establishing a National Road Assessment Programme (https://www.irap.org/partnering-to-save-lives/regional-raps/
- UNESCAP Asian Highway Standard (https://www.unescap.org/sites/default/files/Main%20Report%20-%201%20May%202017.pdf)
- UNRSC IRF Safer Roads and Mobility knowledge resources hosted on www.gtkp.com (e.g. https://www.gtkp.com/themepage.php&themepgid=370)
- Safer Africa – Assessment of road design standards (http://www.saferafrica.eu/publications)

Target 5 - Vehicle standards

The global target and associated indicators

The target and associated indicators in relation to vehicles are:

By 2030, 100% of new (defined as produced, sold or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.

Associated global indicators:

5.1 *Number of countries implementing high quality safety standards for new vehicles.*

5.2 *Number of countries using systematic approaches for vehicle assessments.*

5.3 *Number of countries implementing high quality safety standards for export of used vehicles.*

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Equivalent [requirements]	Requirements with comparable standards as those prescribed by the UN
Global Technical Regulations (GTR) ***UN Regulations*** ***UN Rules***	Global Technical Regulations are regulations which govern the safety and environmental aspects of vehicles and are managed by the UN World Forum for Harmonization of Vehicle Regulations. The UN World Forum for Harmonization of Vehicle Regulations (UNECE Working Party 29) is the primary global body responsible for the development of passenger car safety standards. The World Forum uses two Agreements, adopted in 1958 and 1998, to provide a legal framework that allows any UN Member State to apply voluntarily a wide range of motor vehicle standards. The 1958 Agreement produces UN Regulations containing provisions (for vehicles, their systems, parts and equipment) related to safety and environmental performance. They include test requirements for type approval, the conformity of production (i.e. the means to prove the ability of manufacturers to produce a series of products that exactly match the original type approval specifications) and the mutual recognition of the type approvals granted by Contracting Parties. The 1998 Agreement issues Global Technical Regulations (GTRs) which, unlike the 1958 Agreement, does not require mutual recognition of approvals or certification. This was done particularly to accommodate the USA given its use of self-certification rather than type approval. Although the USA is not a contracting party to the 1958 Agreement, NHTSA's FMVSS standards are widely regarded to be functionally equivalent to many of the UN's Regulations, also because they are widely listed in the compendium of candidates of the 1998 Agreement as a basis of the development of future UN GTRs. The 1997 Agreement provides the basis for UN Rules on periodic technical inspection of vehicles in use. Application or these UN Rules aim in safeguarding that vehicles are kept in a safe and environmentally friendly conditions throughout their lifetime until scrapping.

High quality safety standards	In vehicle safety, high quality safety standards equate to UN vehicle safety standards or equivalent national performance requirements.
Imported vehicles	Vehicles that are brought into a country for use or sale.
National performance requirements [for vehicles]	A set of safety performance requirements set out by a country which vehicles must meet. The requirements should be of an equivalent national standards to the UN vehicle safety standard: e.g. Corresponding standards in USA: FMVSS 208 (Occupant crash protection) and 214 (Side impact protection), FMVSS 209 (Seat belt assembly) and 210 (Seat belt assembly anchorages), FMVSS 225 (Child restraint anchorage systems) until UN GTRs will harmonise provisions on these matters.
Priority UN regulations	The priority UN Regulations include: Reg. 13 Braking (for trucks/buses/coaches and their trailers, includes ABS, ESC etc.) Reg. 13-H Braking for passenger cars Reg. 14 Seat belt anchorages Reg. 16 Safety belts & restraints Reg. 94 Frontal collision Reg. 95 Lateral collision Reg. [100 or new] (GTR 20) Electric vehicle safety Reg.140 (GTR 8) Electronic stability control Reg.127 (GTR 9) Pedestrian protection Reg. 44/129 Child restraints Reg. 78 (GTR 3) Motorcycle ABS Braking regulations (R13 and R13-H): set the basic requirements for safe dynamics of vehicles with provisions regarding various aspects of the braking performance of vehicles and their trailers (including robustness, stability etc.). Frontal impact protection and side impact protection (R94 and R95): These crash-worthiness regulations help to protect occupants withstand the impacts of head on and lateral crashes. During simulated tests, the energy absorbed by the crash-test dummy must be below thresholds for biomechanical injuries for the vehicle to pass the tests. Electronic stability control (R140 or GTR 8): Helps to prevent skidding and loss of control in cases of over-steering or understeering and is effective at reducing crashes and saving lives. Pedestrian front protection (R127 or GTR 9): Requires softer bumpers and modifies the front ends of vehicles (e.g. bonnet structures) to reduce the severity of a pedestrian impact with a car. Seat-belt and seat belt anchorage regulations (R16 and R14): Requires that seat-belts are fitted in vehicles when they are manufactured and ensures that the seat-belt anchor points can withstand the impact incurred during a crash, to minimise the risk of belt slippage and ensure that passengers can be safely removed from their seats if there is a crash. Child restraint regulations (R44 and R129): Requires that instead of holding the child seat in place with the adult seat-belt, the vehicle is equipped with ISOFIX child restraint anchorage points to secure the restraint that are attached directly to the frame of the vehicle. Note that R129 is replacing R44.

	ISOFIX anchorage systems, ISOFIX top tether anchorages and i-Size seating positions (UN Regulation No. 145): this UN Regulation is complementing UN Regulation No. 129 providing provisions for ISOFIX anchorages (in the same way as UN Regulation No. 14 on safety-belt anchorages is complementing UN Regulation No. 16 (Safety-belts)); Motorcycle antilock braking systems (R78 or GTR 3): Help the rider maintain control of the motorcycle vehicle during an emergency braking situation.

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:

(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Have high quality safety standards for produced, imported and registered vehicles Implementation of standards for new vehicles (*) Set-up and operation of a vehicle inspection system (*) Implementation of standards for import of used vehicles (*)	Existence of high quality safety standards for produced and imported vehicles	Ministry of Transport	Official statement
		Existence of high quality safety standards for registered vehicles	Ministry of Transport	Official statement
		% of newly produced vehicles that are checked for compliance with standards	Ministry of Transport Ministry of Economics	Calculation of proportion
		% of imported vehicles that are checked for compliance with standards	Ministry of Transport Ministry of Finance	Calculation of proportion
		% of registerd vehicles that are checked for compliance with standards	Ministry of Transport	Calculation of proportion
Outcome	The vehicle fleet meets high quality safety standards (*)	% of entire vehicle fleet that meets the high quality safety standards	Vehicle owners Police Vehicle inspection services	Survey amongst vehicle owners Verification through police check Estimates based on vehicles inspected

Impact	Reduction of road injuries and fatalities due to vehicle defects and inadequate safety systems	Number of road injuries and fatalities that are due to vehicle defects and inadequate safety systems	Statistics on road injuries and fatalities (in general collected by the police)	Calculation of proportion
		Proportion of road injuries and fatalities that are due to vehicle defects and inadequate safety systems, taking into account exposure and the size of the vehicle fleet	Statistics on road injuries and fatalities (in general collected by the police)	Division of total number by unit of exposure or number of vehicles

Further resources on vehicle standards

- UNRSC/IRF Safer Roads and Mobility knowledge resources – Safer vehicles (https://www.gtkp.com/themepage.php&themepgid=87)
- UNECE Website of WP.29 (http://www.unece.org/trans/main/welcwp29.html)
- Text of the 1958 Agreement for vehicle type-approval (http://www.unece.org/trans/main/wp29/wp29regs.html)
- Regulations linked to the 1958 Agreeemnt (http://www.unece.org/trans/main/wp29/wp29regs0-20.html; http://www.unece.org/trans/main/wp29/wp29regs21-40.html; http://www.unece.org/trans/main/wp29/wp29regs61-80.html; http://www.unece.org/trans/main/wp29/wp29regs81-100.html; http://www.unece.org/trans/main/wp29/wp29regs101-120.html; http://www.unece.org/trans/main/wp29/wp29regs121-140.html; http://www.unece.org/trans/main/wp29/wp29regs141-160.html)
- Text of the 1998 Agreement on UN Global Technical Regulations (http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29glob.html)
- Global Technical Regulations linked to the 1998 Agreement (http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp29glob_registry.html)
- Text of the 1997 Agreement on periodic technical inspection of vehicles (http://www.unece.org/trans/main/wp29/wp29wgs/wp29gen/wp291997.html)
- ERSO – Vehicle Safety (https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/ersosynthesis2018-vehiclesafety.pdf)

Target 6 - Speeding

The global target and associated indicators

The global target and associated indicators in relation to speeding are:

By 2030, halve the proportion of vehicles travelling over the posted speed limit and achieve a reduction in speed-related injuries and fatalities.

Associated global indicators:

6.1 *Number of countries having legislation setting appropriate speed limits and effective enforcement*

6.2 *Number of countries that have reduced by half the proportion of vehicles travelling over the posted speed limit*

6.3 *Number of countries that have national and, where applicable, subnational data systems on speeding violations and speeding-related injuries and fatalities*

6.4 *Number of countries that achieved reductions in speeding-related injuries and fatalities*

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Appropriate speed limit	A legislated maximum speed limit that considers the function, design and safety needs of all road users on public roads.
Effective enforcement	Enforcement activities, in particular police checks, penalties and sanctions, that sufficiently deter a large proportion of road users from non-compliance with speed limits via well-resourced and professionally trained enforcement personnel and or automated speed enforcement system(s).
National data systems	Systems that can gather sub-national speed-related data (e.g. travel speeds, speed-related fatalities and injuries) and analyse the data to give national level aggregate information.
Posted	Publicly visible speed limit information on the roadside.
Speed limit	The maximum speed at which a vehicle can travel on a specific section of a road.
Speed(ing)-related fatalities	Deaths from road crashes that are identified as having vehicle speed as a contributing factor to the crash.
Speed(ing)-related injuries	Injuries from road crashes that are identified as having vehicle speed as a contributing factor to the crash.

Speeding	Travelling at a speed that is above the posted speed limit, or that is inappropriate for the conditions or where the speed is identified as above the design specifications/use of the road.
Speeding violations	Offence notices/penalties issued by enforcement authorities for non-compliance with posted speed limits.
Subnational data systems	Systems at provincial, state, regional, local level within a country that gather speed-related data.
Vehicles	Motorised vehicles that are subjected to speed limits according to legislation.

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:
(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Policy and legislation on speed management, including speed limits setting and speed enforcement (*) Setting of safe and appropriate speed limits on all roads (*) Enforcement of the speed limits (*)	Existence of legislation on speed limits	Ministry of Transport	Official statement
		Existence of legislation on speed enforcement	Ministry of Transport Police	Official statement
		% of km of roads for which safe and appropriate speed limits have been set	Ministries responsible for road infrastructure, Ministry of Transport	Calculation of proportion
		% of the population who consider that the speed limits are appropriate	Population	Survey amogst the population
		Number of vehicles checked for compliance with speed limits	Police	Sum of the number of vehicles checked for speeding
		Existence of data systems on speeding	Police	Official statement

	Implementation of data systems on speeding and speeding related injuries and fatalities (*) Regular public awareness activities on speeding	Existence of data systems on speeding related injuries and fatalities	Police Ministry of Transport Ministry of Health	Official statement
		Budget spent on awareness activities on dangers of speeding	Ministries and agencies responsible for communication	Sum of personnel and operational costs
Outcome	Vehicle drivers comply with speed limits (*)	% of vehicle drivers complying with speed limits	Ministry of Transport Police	Road side observation study Analysis of traffic measurement data Analysis of floating car data
		% of vehicle drivers declaring to have been speeding in the last 30 days	Vehicle drivers	Survey amongst vehicle drivers
		% of vehicle drivers declaring that they find speeding acceptable	Vehicle drivers	Survey amongst vehicle drivers
Impact	Reduction of road injuries and fatalities due to speeding (*)	Number of road injuries and fatalities due to speeding	Statistics on road injuries and fatalities (in general collected by the police)	Sum of all road injuries and fatalities due to speeding
		Proportion of speeding as contributing factor within the total number of road injuries and fatalities	Statistics on road injuries and fatalities (in general collected by the police)	Calculation of proportion

Further resources on speeding and speed management

- GRSP - Speed management: a road safety manual for decision-makers and practitioners (https://www.who.int/roadsafety/projects/manuals/speed_manual/en/)
- WHO – SaveLIVES Technical Package (https://www.who.int/violence_injury_prevention/publications/road_traffic/save-lives-package/en/)
- ERSO – Speed and Speed Management (https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/ersosynthesis2018-speedspeedmanagement.pdf)
- gTPK – Speed Management (https://www.gtkp.com/themepage.php&themepgid=98 & https://www.gtkp.com/assets/uploads/20170412-105220-8360-WHO-NMH-NVI-17.7-eng.pdf)
- ESRA - Speeding. ESRA2 Thematic report Nr. 2 (https://www.esranet.eu/storage/minisites/esra2018thematicreportno2speeding.pdf)
- OECD/ECMT – Speed Management (https://www.itf-oecd.org/sites/default/files/docs/06speed.pdf)
- ETSC – Reducing speeding in Europe. ETSC PIN Flash Report 36 (https://etsc.eu/wp-content/uploads/PIN-flash-report-36-Final.pdf)

Target 7 - Motorcycle helmets

The global target and associated indicator(s)

The global target and associated indicators in relation to motorcycle helmets are:

By 2030, increase the proportion of motorcycle riders correctly using standard helmets to close to 100%.

Associated global indicators:

7.1 Number of countries having legislation requiring motorcycle riders to wear a helmet properly fastened and meeting appropriate standards (FOOTNOTE: Such as UN Regulation 22 or equivalent national standard) for protection

7.2 Number of countries that effectively enforce legislation on helmet use

7.3 Number of countries implementing regulations on safety for child and adult helmets sold

7.4 Number of countries that have national and, where applicable, subnational data systems on helmet use

7.5 Number of countries in which the proportion of motorcycle riders, correctly using helmets is close to 100%

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Appropriate standard	Domestic legislation to refer to UN Regulation 22 or equivalent national standard international standards *(FMVSS218 until a UN GTR will be developed on the same subject)*.
Child helmet	A helmet that is designed specifically to provide protection to children.
Correct use [of helmet]	The helmet is worn and fastened according to manufacturer instruction.
Effective enforcement	Enforcement activities, in particular police checks, penalties and sanctions, that sufficiently deter a large proportion of road users from non-compliance with motorcycle helmet wearing laws via well-resourced and professionally trained enforcement personnel.
Helmet	Protective head gear worn by drivers and passengers of 2 and 3 wheeler vehicles.
Helmet use	Appropriate wearing of a helmet.
Implement regulation	Preparation and implementation of rules that support helmet use legislation to ensure safe use of quality helmets and enforcement of such rules.

Motorcycle	Motorised 2-wheeler or 3-wheeler. This may include electric bikes (E-bikes) in some countries. Some mopeds can be considered as motorcycles by national law with similar helmet requirements.
Motorcycle rider	Driver and all passengers on the motorised 2-wheeler.
National data systems	Systems that can gather sub-national data relating to helmet use (e.g. travel speeds, speed-related crashes, fatalities, injuries) and analyse the data to give national level aggregate information.
Proper fastening	Helmet is buckled and secured on the head to offer maximum protection.
Standard helmet	A helmet that meets the documented requirements as specified in a helmet standard.
Subnational data systems	Systems at a provincial, state, regional, local level within a country that gather helmet-related road trauma data.
UN Regulation 22	United Nations Regulation (also known as UN R 22) which defines what manufacturers have to do in order to produce and test an effective motorcycle crash helmet

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:

(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Policy and legislation on quality of helmets, on appropriate helmet wearing and on enforcement of helmet use by all	Existence of legislation on quality of helmets for motorcyclists	Ministry of Transport	Official statement
		Existence of legislation on appropriate helmet wearing for motorcyclists	Ministry of Transport	Official statement
		Existence of legislation on enforcement of helmet use by all motorcyclists	Ministry of Transport Police	Official statement

	motorcyclists (riders and passengers) (*) Implementation of a compliance system for insuring quality of helmets sold (in order to meet UN Regulation 22 or equivalent national standards) (*) Enforcement of helmet wearing (for all 2- and 3-wheel powered riders and passengers) (*) Implementation of data systems on helmet use (*) Regular public awareness activities on helmet use	% of motorcycle helmets sold/registered complying with the quality standards	Ministry of Transport	Calculation or proportion
		Existence of a system that assesses compliance of helmets against quality standards	Ministry of Transport	Official statement
		% of motorcylists agreeing with the need to wear helmets that comply with the quality standards	Motorcyclists	Survey amongst motorcyclists
		Number of motorcyclists checked for compliance with wearing helmets	Police	Sum of vehicles checked for wearing an appropriate helmet
		Existence of data systems on helmet use	Police Ministry of Transport	Official statement
		Budget spent on public awareness activities on helmet use	Ministries and agencies responsible for communication	Sum of personnel and operational costs
Outcome	Motorcyclists (2- and 3-wheel powered riders and passengers) appropriately wear an appropriate helmet (*)	% of motorcyclists appropriately wearing an appropriate helmet	Ministry of Transport Police	Road side observation study
		% of motorcyclists declaring to always wear a helmet	Motorcyclists	Survey amongst motorcyclists
		% of motorcyclists declaring that not wearing a helmet is acceptable	Motorcyclists	Survey amongst motorcyclists
Impact	Reduction in head injuries (fatal or severe) of motorcyclists	Number of head injuries (fatal or severe) of motorcyclists	Statistics on head injuries and fatalities (collected from hospitals and emergency services)	Sum of all head injuries and fatalities of motorcyclists
		Number of head injuries (fatal or severe) of motorcyclists, taking into account exposure	Statistics on head injuries and fatalities (collected from hospitals and emergency services)	Calculation of proportion

Further resources on motorcycle helmets

- gTPK – Helmets (https://www.gtkp.com/themepage.php&themepgid=99)
- WHO – Helmets: a road safety manual for decision-makers and practitioners (https://www.grsproadsafety.org/wp-content/uploads/Helmets_English.pdf)
- WHO – Powered two- and three-wheeler safety: a road safety manual for decision-makers and practitioners (https://www.grsproadsafety.org/wp-content/uploads/WHO-green-manual-on-2-3-wheeler-safety.pdf)
- WHO - SaveLIVES Technical Package (https://www.who.int/violence_injury_prevention/publications/road_traffic/save-lives-package/en/)

Target 8 - Vehicle occupant protection

The global target and associated indicators

The global target and associated indicators in relation to vehicle occupant protection are:

By 2030, increase the proportion of motor vehicle occupants using safety belts or standard child restraint systems to close to 100%.

Associated global indicators:

8.1 Number of countries having and effectively enforcing legislation requiring the use of safety belts for all motor vehicle occupants

8.2 Number of countries having and effectively enforcing legislation requiring the use of child-restraint systems meeting appropriate standards (FOOTNOTE: Such as UN Regulation No. 44 or 129 and UN Regulation No. 145 or equivalent national standard)

8.3 Number of countries in which the proportion of all motor vehicle occupants using safety belts is close to 100%

8.4 Number of countries in which the proportion of all child motor vehicle occupants using standard child restraints systems is close to 100%

8.5 Number of countries having and effectively enforcing regulations on safety for child restraints systems sold

8.6 Number of countries that have national and, where applicable, subnational data on use of safety belts, as well as the appropriate use of child restraint systems

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Appropriate standard	An authorized statement that sets minimum specifications to ensure that safety belts and child restraints will be of sufficiently high quality to be effective in reducing injuries/deaths. For safety belts these standards should be based on UN Regulations Nos. 16 (Safety-belts) and 14 (Safety anchorages) or equivalent national standards such as FMVSS 209 (Seat belt assembly) and 210 (Seat belt assembly anchorages) or equivalent until a UN GTR will be developed on the same subject. For child restraint systems, these standards should be based on UN Regulation Nos. 44 and 129 (Enhanced Child Restraint Systems) and UN Regulation No. 145 (ISOFIX anchorage systems, ISOFIX top tether anchorages and Size seating positions) or equivalent national standard such as FMVSS 225 until a UN GTR will be developed on the same subject.
Appropriate use [of CRS]	Use of a child restraint according to manufacturer specifications and the relevant law
Child restraint system (CSR)	A device designed specifically for a child that aims to prevent or minimise injury to a child in a vehicle when a crash occurs by restraining the child to prevent him/her being ejected from the vehicle or colliding with other things inside the vehicle

Effectively enforce legislation	Enforcement activities, in particular police checks, penalties and sanctions, that sufficiently deter a large proportion of road users from non-compliance with use of certified restraint system related laws via well-resourced and professionally trained enforcement personnel.
National data	Data relating to restraint use that is captured at the national level or can be aggregated from subnational level to provide a national snapshot
Safety belt	A device designed to prevent or minimise injury to a person in a vehicle when a crash occurs by restraining the person to prevent him/her being ejected from the vehicle or colliding with other things inside the vehicle
Subnational data	Information gathered at a provincial, state, regional, local level within a country on restraint use and related road trauma
Use of safety belt	Correct positioning and fastening of a belt for maximum protection, in accordance with manufacturer instruction
Vehicle occupant	Person travelling inside a vehicle

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:
(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Policy and legislation on installation and use of safety belts in cars (*) Policy and legislation on quality, installation and use of child restraint systems (CRS) in cars (*) Policy and legislation on the enforcement of the use of safety belts and CRS (*)	Existence of legislation on appropriate fitment and use of safety belts for car drivers and passengers	Ministry of Transport	Official statement
		Existence of legislation on appropriate fitment and use of child restraint systems (CRS) in cars	Ministry of Transport	Official statement
		Existence of legislation on enforcement of safety belt wearing and CRS use	Ministry of Transport Police	Official statement
		Existence of a system that assesses compliance of child restraints against quality standards	Ministry of Transport	Official statement

	Implementation of a compliance system for insuring the quality of child restraints sold and used (*) Enforcement of the correct seating position and the use of safety belts and child restraint systems (*) Implementation of data systems on safety belt and CRS use (*) Regular public awareness activities on safety belt and CRS use	% of child restraints sold/used that comply with the quality standards	Ministry of Transport Ministry of Economic affairs	Analysis of sales figures Sampling survey
		Number of vehicle occupants checked for compliance with safety belt use	Police	Sum of the number of vehicles checked for safety belt use
		Number of child vehicle occupants checked for compliance with child restraint use	Police	Sum of the number of vehicles checked for safety belt use
		Existence of data systems on the use of safety belts and CRS	Police	Official statement
		Budget spent on public awareness activities on safety belts and CRS	Ministries and agencies responsible for communication	Sum of personnel and operational costs
Outcome	Car occupants use correct seating position Car occupants wear safetybelts appropriately Relevant aged children are appropriately restrained in cars	% of motor vehicle drivers correctly wearing a safety belt	Ministry of Transport Police	Road side survey Analyses of police data on safety belt use
		% of motor vehicle passengers correctly wearing a safety belt	Ministry of Transport Police	Road side survey Analyses of police data on safety belt use
		% of children correctly fastened in CRS (or safety belts, from the appropriate age/size)	Ministry of Transport Police	Road side survey Analyses of police data on safety belt use
		% of car drivers and passengers declaring to always fasten their safety belt while driving	Population	Survey amogst the population
		% of car drivers declaring to always fasten children in an appropriate CRS in their car	Population	Survey amogst the population
Impact	Reduction of road injuries and fatalities due to non use of safety belt Reduction of road injuries and fatalities among children due to non use of child restraint systems Reduction in the average severity of the injuries	Number of road injuries and fatalities due to incorrent or non use of a safety belt	Statistics on road injuries and fatalities (in general collected by the police)	Sum of all road injuries and fatalities due to speeding
		Number of road injuries and fatalites due to incorrect or non use of child restraint systems	Statistics on road injuries and fatalities (in general collected by the police)	Sum of all road injuries and fatalities due to speeding
		Average severity of the injuries of vehicle occupants in a road crash	Statistics on road injuries and fatalities (in general collected by the police) Hospitals	% of MAIS3+ and fatalities amogst injured % of fatalities amongst accidents
		Proportion of inappropriate or non use of restraints as contributing factor within the total number of road injuries and fatalities	Statistics on road injuries and fatalities (in general collected by the police)	Calculation of proportion

Further resources on vehicle occupant protection

- FIA Foundation – Seat-belts and child restraints: a road safety manual for decision-makers and practitioners (https://www.who.int/roadsafety/projects/manuals/safety belt/en/)
- WHO – SaveLIVES Technical package (https://www.who.int/violence_injury_prevention/publications/road_traffic/save-lives-package/en/)
- gTPK – Seatbelts (https://www.gtkp.com/themepage.php&themepgid=97)
- ESRA – Seatbelt and child restraint systems (https://www.esranet.eu/storage/minisites/esra-2015-thematic-report-no-4-seatbelt-and-child-restraint-systems.pdf)
- ETSC website on seatbelts (https://etsc.eu/tag/seatbelts/)

Target 9 - Driving under the influence

The global target and associated indicators

The global target and associated indicators in relation to driving under the influence are:

By 2030, halve the number of road traffic injuries and fatalities related to drivers using alcohol, and/or achieve a reduction in those related to other psychoactive substances.

Associated global indicators:

9.1 *Number of countries having appropriate legislation and effective enforcement on driving under the influence of alcohol and/or other psychoactive substances*

9.2 *Number of countries that have national and, where applicable, subnational data on driving under the influence of alcohol and/or psychoactive substances and related road traffic-related fatalities and injuries*

9.3 *Number of countries that have reduced by half the number of road traffic injuries and fatalities related to driving under the influence of alcohol and/or other psychoactive substances*

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Appropriate legislation	Laws that specify issues including allowable amounts of alcohol and/or psychoactive substances for road user groups, enforcement mechanisms for testing these amounts, and penalties for offences
Driving under the influence of alcohol	Controlling a vehicle while impaired by alcohol (having alcohol in the blood or breath in excess of the legal limit).
Driving under the influence of psychoactive substances	Controlling a vehicle while impaired by a drug that is considered to be a psychoactive substance (the presence of psychoactive substance in excess of the legal limit).
Effective enforcement	Enforcement activities, in particular police checks, penalties and sanctions, that sufficiently deter a large proportion of road users from non-compliance with impaired driving laws via well-resourced and professionally trained enforcement personnel.
National data	Data relating to alcohol and/or psychoactive substance use and road crashes that is captured at the national level or can be aggregated from subnational level to provide a national snapshot
Psychoactive substances	A substance that has the ability to affect mental processes such as an individual's consciousness, mood or thinking
Subnational data	Information at a provincial, state, regional, local level within a country on alcohol and/or psychoactive substance-related road trauma data

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:
(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Policy and legislation on drink driving management (DUI limits, enforcement, awareness) (*) Policy and legislation on drug impaired driving management (*) Enforcement of DUI limits and other alcohol related legislation (*) Enforcement of drug impaired driving laws (*) Implementation of data systems on driving under the influence of alcohol and/or other psychoactive substances (*) Regular public awareness activities on driving under the influence of alcohol and psychoactive substrances	Existence of legislation specifying legal maximum blood alcohol concentration (BAC) levels	Ministry of Transport	Official statement
		Existence of legislation specifying legal maximum levels of psychoactive substances	Ministry of Transport	Official statement
		Existence of legislation specifying enforcement of BAC limits and other DUI legislation	Ministry of Transport Police	Official statement
		Number of drivers checked for compliance with alcohol DUI limits	Police	Sum of the number of vehicles checked for DUI alcohol
		Number of drivers tested for pyschoactive substance use	Police	Sum of the number of vehicles checked for DUI drugs
		Existence of data systems on driving under the influence of alcohol and/or other psychoactive substances	Ministry of Transport Police	Official statement
		Existence of data systems on road injuries and fatalities caused by impaired driving	Ministry of Transport Police	Official statement
		Budget spent on public awareness activiites related to driving under influence of alcohol and psychoactive substances	Ministries and agencies responsible for communication	Sum of personnel and operational costs

Outcome	Drivers comply with DUI alcohol limits Drivers do not use psychoactive substances before driving	% of vehicle drivers complying with alcohol DUI limits	Police	Road side measurement (random checks by police)
		% of vehicle drivers declaring to have drunk alcohol over the legal limit before driving (in the last 30 days)	Vehicle drivers	Survey amongst vehicle drivers
		% of vehicle drivers declaring to have used psychoactive substances before driving (in the last 30 days)	Vehicle drivers	Survey amongst vehicle drivers
Impact	Reduction in the number of road injuries and fatalities due to alcohol use by drivers (*) Reduction of road injuries and fatalities due to psychoactive substance use by driver (*)	Number of road injuries and fatalities due to illegal alcohol level of driver	Statistics on road injuries and fatalities (in general collected by the police)	Sum of all road injuries and fatalities due to alcohol consumption
		Number of road injuries and fatalites due to psychoactive substance level of driver	Statistics on road injuries and fatalities	Sum of all road injuries and fatalities due to use of psychoactive substance use
		Proportion of alcohol consumption as a contributing factor within the total number of road injuries and fatalities	Statistics on road injuries and fatalities	Calculation of proportion
		Proportion of driver-psychoactive substance use as a contributing factor within the total number of road injuries and fatalities	Statistics on road injuries and fatalities	Calculation of proportion

Further resources on driving under the influence

- GRSP – Drinking and Driving: a road safety manual for decision-makers and practitioners (https://www.grsproadsafety.org/wp-content/uploads/DrinkingDriving_English.pdf)
- WHO – Drug use and road safety: a policy brief (https://www.who.int/substance_abuse/drug_use_road_safety/en/)
- WHO – SaveLIVES Technical Package (https://www.who.int/violence_injury_prevention/publications/road_traffic/save-lives-package/en/)
- gTKP – Drinking and driving (https://www.gtkp.com/themepage.php&themepgid=96)
- ESRA – Driving under the influence of alcohol and drugs (https://www.esranet.eu/storage/minisites/esra2018thematicreportno5drivingunderinfluence.pdf)
- ERSO – Alcohol (https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/ersosynthesis2018-alcohol.pdf)
- EMCDDA – Driving Under the Influence of Drugs, Alcohol and Medicines in Europe (http://www.emcdda.europa.eu/system/files/publications/743/TDXA12006ENN_402402.pdf)
- ETSC – Progress in reducing drink-driving and other alcohol-related road deaths in Europe (https://etsc.eu/wp-content/uploads/reducingdrinkdriving_031219_design_final.pdf)
- ETSC - Preventing Drug Driving in Europe (https://etsc.eu/wp-content/uploads/WEB_drug_driving_report.pdf)

Target 10 - Distraction by mobile phone

The global target and associated indicators

The global target and associated indicators in relation to distraction by mobile phone are:

By 2030, all countries have national laws to restrict or prohibit the use of mobile phones while driving.

Associated global indicators:

10.1 Number of countries having and effectively enforcing legislation on restricting or prohibiting the use of mobile phones while driving

10.2 Number of countries that have national and, where applicable, subnational data systems on the use of mobile phones while driving

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Effective enforcement	Enforcement activities, in particular police checks, penalties and sanctions, that sufficiently deter a large proportion of road users from non-compliance with road traffic laws on mobile phone use, via well-resourced and professionally trained enforcement personnel.
National data systems	Systems that can gather sub-national data relating to phone use while driving (e.g. proportion of drivers using phone while driving, fatalities, injuries related to drivers using phones) and analyse the data to give national level aggregate information
Restrict use	Limit the use of a phone in some way (e.g. only hands-free allowed)
Subnational data systems	Systems at a provincial, state, regional, local level within a country that gather phone use-related road trauma data
Use of mobile phones	Can include phone use for making/receiving calls, sending/receiving text messages, use of directional maps, social media etc.

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:

(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Policy and legislation on the use of mobile phones while driving (phone mode, awareness, enforcement) (*) Enforcement of mobile phone legislation Implementation of data systems on distraction by phone (*) Regular public awareness activities on the distracting effects of mobile phone use	Existence of legislation on the use of mobile phone while driving	Ministry of Transport	Official statement
		Existence of legislation on enforcement of mobile phone use while driving	Ministry of Transport Police	Official statement
		Number of drivers checked for compliance with mobile phone legislation	Police	Sum of the number of vehicles checked for mobile phone use
		Existence of data systems on distraction by phone	Police Ministry of Transport	Official statement
		Existence of data systems on road injuries and fatalities caused by distraction by mobile phone	Police Ministry of Transport Ministry of Health	Official statement
		Budget of public awareness activities on the distracting effects of mobile phone use	Ministries and agencies responsible for communication	Sum of personnel and operational costs
Outcome	Drivers are not distracted by mobile phones while driving	% of vehicle drivers that are using their mobile phone (handheld) while driving	Ministry of Transport Police	Road side observation study Dat
		% of vehicle drivers declaring to have used their mobile phone for phoning while driving in the last 30 days	Vehicle drivers	Survey amongst vehicle drivers
		% of vehicle drivers declaring to have used their mobile phone for texting while driving in last 30 days	Vehicle drivers	Survey amongst vehicle drivers
Impact	Reduction in the number of road injuries and fatalities caused by distraction from mobile phone use	Number of road injuries and fatalities due to distraction by mobile phone	Statistics on road injuries and fatalities (in general collected by the police)	Sum of all road injuries and fatalities due to use of mobile phone
		Proportion of distraction by phone as contributing factor within the total number of road injuries and fatalities	Statistics on road injuries and fatalities (in general collected by the police)	Calculation of proportion

Further resources on distraction by mobile phone

- WHO - Mobile phone use: a growing problem of driver distraction (WHO) (http://www.who.int/violence_injury_prevention/publications/road_tra€c/en/index.html)
- FERSI – Guidelines for assessing the prevalence of mobile phone use in traffic (https://fersi.org/wp-content/uploads/2019/11/Guidelines-prevalence-mobile-phone-use.pdf)
- ESRA – Distraction (mobile phone use) (https://www.esranet.eu/storage/minisites/esra2018thematicreportno3distraction.pdf)
- ERSO – Driver distraction (https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/ersosynthesis2018-driverdistraction.pdf)

Target 11 - Professional drivers

The global target and associated indicators

The global target and associated indicators in relation to professional drivers are:

By 2030, all countries to enact regulation for driving time and rest periods for professional drivers, and/or accede to international/regional regulation in this area.

Associated global indicators:

11.1 Number of countries having acceded to international/regional regulation on driving time and rest periods for professional drivers

11.2 Number of countries with regulation, effective enforcement, and audit of driving time and rest periods for professional drivers

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Accede to regulation	Accession is an act by which a State signifies its agreement to be legally bound by the terms of a particular treaty. It has the same legal effect as ratification but is not preceded by an act of signature. In this case it refers to regulations which set out the employment and qualification requirements for those who are paid to drive vehicles carrying passengers or goods.
Audit	Inspection of the compliance with regulation and requirements – in this case the regulations on driving time and rests periods for professional drivers
Driving time	The time spent by a professional driver in a vehicle behind the wheel between two daily rest periods; whether or not the vehicle is moving. The main EU rules on driving hours are that you must not drive more than 9 hours in a day – this can be extended to 10 hours twice a week – 56 hours in a week and 90 hours in any 2 consecutive weeks.
Effective enforcement	Enforcement activities, in particular checks, penalties and sanctions, that sufficiently deter a large proportion of road users from non-compliance with regulations for professional drivers, via well-resourced and professionally trained enforcement personnel. Regulations may be enforced either by traffic police or another government agency with specific powers.
Enact regulation	To state, implement and enforce the regulations necessary to achieve the desired policy goal, e.g. to follow the requirements of an Agreement a country has acceded to.
Professional driver	A person who is paid to drive either as an employee or as a self-employed person who drives a vehicle for commercial gain.
Regional	In the context of this global target, "region" refers to a geographic region covering several countries (e.g. the European Union).
Rest period	Period of time when a driver is not engaged in driving, other work activities or availability (stand-by times). Ideally drivers should have at least 11 hours of rest every day.

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:
(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Policy and legislation on licence requirements, driving times and rest periods for professional drivers (*) Implementation of legislation on licence requirements, driving time and rest periods for professional drivers (*) Enforcement of the legislation for professional drivers (*)	Existence of legislation on licence requirements for professional drivers	Ministry of Transport	Official statement
		Existence of legislation on driving times and rest periods for professional drivers	Ministry of Transport	Official statement
		Existence of legislation of enforcement of regulations for professional drivers	Ministry of Transport	Official statement
		% of professional drivers undergoing training or retraining	Ministry of Transport Ministry of Employment	Calculation of proportion
		% of trcuks equipped with adeqiuate recording systems for driving and rest periods	Ministry of Transport	Calculation of proportion
		% of professional drivers that is checked for compliance with regulation on driving times and rest periods	Ministry of Transport Police	Calculation of proportion
Outcome	Professional drivers meet the licence requirements Professional drivers comply with driving time and rest periods	% of professional drivers who meet all licence requirements	Ministry of Transport	Calculation of proportion
		% of professional drivers who comply with requirements for driving time and rest periods	Ministry of Transport Police	Calculation of proportion
Impact	Reduction in the number of road injuiries and fatalities involving professional drivers	Number of road injuries and fatalities involving professional drivers	Police Official road safety statistics	Sum of all road injuries and fatalities involving professional drivers

		Relative number of road injuries and fatalities involving professional drivers, taking into account population and exposure	Police Official road safety statistics	Calculation of proportion

Further resources on professional drivers

- ETSC Praise Project (https://etsc.eu/projects/praise/)
- Driving for Better Business (www.drivingforbetterbusiness.com)
- ILO - Decent Work and Road Safety in the Transport Sector (https://www.ilo.org/Search5/search.do?sitelang=en&locale=en_EN&consumercode=ILOHQ_STELLENT_PUBLIC&searchWhat=professional+drivers&searchLanguage=en)
- ERSO – Work related road safety (https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/ersosynthesis2018-workrelatedroadsafety.pdf)
- European regulation on driving times, breaks and rest periods - Regulation (EC) No 561/2006 (http://data.europa.eu/eli/reg/2006/561/2015-03-02)

Target 12 - Timely emergency care

The global target and associated indicators

The global target and associated indicators in relation to emergency services are:

By 2030, all countries establish and achieve national targets in order to minimize the time interval between a road traffic crash and the provision of first professional emergency care.

Associated indicators:

12.1 *Number of countries that have achieved the national targets of the time interval between a crash resulting in serious injury and the provision of first professional emergency care*

12.2 *Number of countries that have appointed agencies for effective coordination of the provisions of pre-hospital and facility-based emergency medical services*

The table below includes some information about the terms used in the target and indicators:

Terms	Explanation
Achieve targets	Meeting the parameters that have been set at the national level specifying the goal for the maximum time interval between a road traffic crash resulting in serious injury and first professional emergency care. For example, a target might be expressed as a mean number of minutes.
Agency	Government body or office, such as a directorate within the Ministry of Health, that is mandated to oversee delivery of emergency care in the country and has the authority to coordinate both prehospital and facility-based emergency care services. Prehospital emergency care services that may be overseen by a coordinating agency include universal access numbers (such as 112 and 911), professional clinical care at the scene and during transport, dispatch, ambulance use, and first aid trainings. Facility-based emergency care services that may be overseen by a coordinating agency include triage protocols, professional clinical care, clinical protocols, equipment/laboratory/radiology standards and facility accreditation and designation protocols.
Facility-based [emergency medical service]	Facility-based emergency care is delivered in clinics or hospitals. Facility-based emergency care services may include triage protocols, professional clinical care, clinical protocols, equipment/laboratory/radiology standards and facility accreditation and designation protocols.
Pre-hospital [emergency medical service]	Prehospital emergency care is provided at the scene of an injury or during ambulance transport to a health facility. Prehospital emergency care services may include universal access numbers (such as 112 and 911), professional clinical care at the scene and during transport, dispatch, ambulance use, and first aid.
First professional emergency care	First professional emergency care refers to the first contact an injured person has with an emergency care clinical professional. In systems with a formal prehospital system in which ambulances are staffed with clinical professionals, this may be provided by an ambulance provider. In systems with a formal Community First Aid Responder program, which is part of the coordinated prehospital response, this may be provided

	by a community member. In other contexts, first professional emergency care may be provided at a facility where an injured person has been transported by any means other than an ambulance. First professional emergency care does not include first aid delivered by bystanders, other laypeople or other non-clinical first responders, such as police.
Serious injury	This may be variably defined by countries (possibly via the use of standardised severity scores). However, this term is meant to limit the use of this indicator to crashes which result in injuries requiring time-sensitive care. In persons with such injuries, delays to care are inappropriate.
Targets	Parameters defined at the national or sub-national level specifying the goal for the maximum interval between serious injury and first professional emergency care.
Time interval	The complete interval from the time of crash to the time of first contact with professional emergency care, whether that contact is with an ambulance-based provider or community first aid responder dispatched to the scene or whether that first professional emergency care is in a facility reached by other transport. This interval may include several sub-intervals that are routinely collected in high-resource settings (such as time from call to dispatch of ambulance, time from call to ambulance arrival to scene, time from scene arrival to scene departure, etc.).

What needs to be done and how can it be measured?

The table below uses the Actions-Outcome-Impact logic described earlier in this document. For each of the 3 phases, the table lists:

(1) one or more key elements that are required;
(2) possible ways to measure these elements (indicators);
(3) possible sources for the data for measurements; and
(4) a brief indication of the method for calculation the indicator.

Elements marked with an (*) provide a direct input to the global targets and indicators. Countries can identify other or more specific elements that are needed. There could also be alternative ways of measurement. Each measurement can be turned into one or more national indicators. Countries are encouraged to set national targets for each of these indicators.

Phases	Key elements	Possible ways to measure	Source	Method
Actions	Policy specifiying national (or sub-national) target(s) and parameters for maximum time interval between a road crash resulting in serious injury and the provision of first professional emergency care. Designation of a lead government agency with authority to coordinate pre-hospital and facility-based emergency care (*) Adequate distributuon and resourcing of emergency care services across the country	Existence of a policy specifying national (or sub-national) time targets and parameters for the maximum interval between a road crash resulting in serious injury and the provision of first professional emergency care	Ministry of Health/ Emergency care agency	Official statement (based on national review)
		Use of appropriate methods and clear definitions to register and document time intervals between a road crash (including time of crash occurrence, arrival of police, call for emergency care, etc.) and first professional emergency care delivered to the injured persons	Ministry of Health / Emergency care agency Prehospital care services, clinics and hospitals Police Vehicle data	Review of documentation from police and emergency care services Analysis of data of automated vehicle reporting technologies
		Existence of a designated agency with authority to coordinate emergency care, including prehospital and facility-based emergency care services	Ministry of Health/ Emergency care agency	Official statement
		% of severe injury crashes where no emergency care services were provided	Ministry if Health/ Emergecey care agency Police	Analysis of data from police and emergency care services
Outcome	National time target parameter for interval between crash and provision of first professional emergency care is within national target (*) Reduction of the time to professional emergency care for those injured in a road traffic crash	% of road traffic crashes resulting in serious injury where the time interval to professional emergency care did not exceed the national target	Ministry of Health / Emergency care agency Emergency care services Police	Analysis of data from police and emergency care services
		% of injured in road crashes who received timely emergency care at the scene, during transport and/or at the facility	Ministry of Health / Emergency care agency Emergency care services Police	Review of data from prehospital care services
Impact	Reduction in the number of deaths and disability resulting from road traffic crashes due to late or absence of professional emergency care services	Proportion of the number of road traffic deaths among those severely injured in road traffic crashes	Statistics on road injuries and fatalities (in general collected by the police) Ministry of Health	Review of accident and fatality data
		Proportion of the number of road traffic deaths among those presented to hospitals for road traffic injuries	Hospitals Ministry of Health Emergency care services	Review of data from from hospital and prehospital care services

Further resources on emergency care

- WHO Emergency Care Programme (http://www.who.int/emergencycare)
- ERSO – Post-impact care (https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/pdf/ersosynthesis2018-postimpactcare.pdf)
- WHO-ICRC Basic Emergency Care (BEC): Approach to the acutely ill and injured (https://www.who.int/emergencycare/publications/Basic-Emergency-Care/en/)
- WHO - Post crash response: Supporting those affected by road traffic crashes (https://www.who.int/violence_injury_prevention/publications/road_traffic/post-crash-response/en/)
- WHO Trauma Care Checklist (https://www.who.int/emergencycare/trauma-care-checklist-launch/en/)
- WHO Global Alliance for Care of the Injured (https://www.who.int/emergencycare/gaci/en/)
- WHO Surgical Care Programme (http://www.who.int/surgery)
- WHO International Registry for Trauma and Emergency Care (https://www.who.int/emergencycare/irtec/en/)
- WHO Guidelines for Essential Trauma Care, 2004 (http://apps.who.int/iris/bitstream/10665/42565/1/9241546409_eng.pdf)

Part 3

Summary tables

Overview of global targets and indicators

	Targets	Voluntary global targets and associated indicators
1	**National action plan**	**By 2020, all countries establish a comprehensive multisectoral national road safety action plan with time-bound targets.** • Number of countries with published national action plan with regularly updated time-bound targets for reductions in fatalities and injuries • Number of countries that have a national lead agency to coordinate, monitor, evaluate and implement the multi-sectoral national road safety action plan
2	**Global alignment**	**By 2030, all countries accede to one or more of the core road safety-related UN legal instruments.** • Number of countries that have ratified or acceded to one or more of the core road safety-related UN legal instruments
3	**New roads**	**By 2030, all new roads achieve technical standards for all road users that take into account road safety, or meet a three star rating or better.** • Number of countries that have implemented technical standards for new roads that take into account the safety of all road users, or that are aligned with the relevant UN Conventions and regulate compliance to those standards • Number of countries using systematic approaches to assess/audit new roads
4	**Existing roads**	**By 2030, more than 75% of travel on existing roads is on roads that meet technical standards for all road users that take into account road safety.** • Number of countries that have developed and implement a plan for the improvement of the existing roads that take into account the safety of all road users • Number of countries using systematic approaches to assess/audit existing roads
5	**Vehicle standards**	**By 2030, 100% of new (defined as produced, sold or imported) and used vehicles meet high quality safety standards, such as the recommended priority UN Regulations, Global Technical Regulations, or equivalent recognized national performance requirements.** • Number of countries implementing high quality safety standards for new vehicles • Number of countries using systematic approaches for vehicle assessments • Number of countries implementing high quality safety standards for export of used vehicles
6	**Speeding**	**By 2030, halve the proportion of vehicles travelling over the posted speed limit and achieve a reduction in speed-related injuries and fatalities.** • Number of countries having legislation setting appropriate speed limits and effective enforcement • Number of countries that have reduced by half the proportion of vehicles travelling over the posted speed limit • Number of countries that have national and, where applicable, subnational data systems on speeding violations and speeding-related injuries and fatalities • Number of countries that achieved reductions in speeding-related injuries and fatalities
7	**Motorcycle helmets**	**By 2030, increase the proportion of motorcycle riders correctly using standard helmets to close to 100%.** • Number of countries having legislation requiring motorcycle riders to wear a helmet properly fastened and meeting appropriate standards • Number of countries that effectively enforce legislation on helmet use • Number of countries implementing regulations on safety for child and adult helmets sold • Number of countries that have national and, where applicable, subnational data systems on helmet use • Number of countries in which the proportion of motorcycle riders, correctly using helmets is close to 100%

	Targets	Voluntary global targets and associated indicators
8	**Vehicle occupant protection**	**By 2030, increase the proportion of motor vehicle occupants using safety belts or standard child restraint systems to close to 100%.** • Number of countries having and effectively enforcing legislation requiring the use of safety belts for all motor vehicle occupants • Number of countries having and effectively enforcing legislation requiring the use of child-restraint systems meeting appropriate standards • Number of countries in which the proportion of all motor vehicle occupants using safety belts is close to 100% • Number of countries in which the proportion of all child motor vehicle occupants using standard child restraints systems is close to 100% • Number of countries having and effectively enforcing regulations on safety for child restraints systems sold • Number of countries that have national and, where applicable, subnational data on use of safety belts, as well as the appropriate use of child restraint systems
9	**Driving under the influence**	**By 2030, halve the number of road traffic injuries and fatalities related to drivers using alcohol, and/or achieve a reduction in those related to other psychoactive substances.** • Number of countries having appropriate legislation and effective enforcement on driving under the influence of alcohol and/or other psychoactive substances • Number of countries that have national and, where applicable, subnational data on driving under the influence of alcohol and/or psychoactive substances and related road traffic-related fatalities and injuries • Number of countries that have reduced by half the number of road traffic injuries and fatalities related to driving under the influence of alcohol and/or other psychoactive substances
10	**Distraction by mobile phone**	**By 2030, all countries have national laws to restrict or prohibit the use of mobile phones while driving.** • Number of countries having and effectively enforcing legislation on restricting or prohibiting the use of mobile phones while driving • Number of countries that have national and, where applicable, subnational data systems on the use of mobile phones while driving
11	**Professional drivers**	**By 2030, all countries to enact regulation for driving time and rest periods for professional drivers, and/or accede to international/regional regulation in this area.** • Number of countries having acceded to international/regional regulation on driving time and rest periods for professional drivers • Number of countries with regulation, effective enforcement, and audit of driving time and rest periods for professional drivers
12	**Timely emergency care**	**By 2030, all countries establish and achieve national targets in order to minimize the time interval between a road traffic crash and the provision of first professional emergency care.** • Number of countries that have achieved the national targets of the time interval between a crash resulting in serious injury and the provision of first professional emergency care • Number of countries that have appointed agencies for effective coordination of the provisions of pre-hospital and facility-based emergency medical services

Actions – Outcome – Impact

The table below lists the main actions, desirable outcome and expected impacts that are linked to each of the 12 targets. It brings together, in one table, the elements that have been listed in Part 2. The elements included in this table are closely linked to the 12 global targets and 34 indicators. Countries can, however, add other and/or more specific elements.

	Actions	Outcome	Impact
1. Action plan	• A national action plan for road safety with time-bound targets • Nomination of a lead agency by government • Implementation of the national action plan • Regular update of the targets • Operation of the lead agency	• The interventions foreseen in the national plan are achieved • The targets listed in the national plan are achieved	• Reduction of the negative impact of the contributing factors • Overall reduction in road injuries and fatalities
2. Global alignment	• Adhesion and ratification of Agreements and Conventions	• The Agreements and Conventions are fully implemented at national level	• Reduction of the negative impact of the contributing factors • Overall reduction in road injuries and fatalities
3. New roads	• Appropriate technical standards (three star or equivalent) for new roads • Use of these standards in the design and build of new roads • Use of a systematic approach for undertaking preliminary/detailed road safety design audits of new roads	• New roads are safer for all road user groups (three star level or better)	• Reduction of road injuries and fatalities on new roads, compared to existing roads
4. Existing roads	• Appropriate technical standards for existing roads • A plan for the safety improvement of existing roads • Establish a budget for safer roads • Improvement of existing roads in view of meeting the technical standards • Use a systematic approach to the conduct of road safety inspections/assessments of existing roads or iRAP star ratings • Undertake road safety inspections/assessments for existing roads with identified corrective safety work	• Improved safety of existing roads	• Reduction of road crash injuries and fatalities on existing roads
5. Vehicle standards	• Have high quality safety standards for produced, imported and registered vehicles • Implementation of standards for new vehicles • Set-up and operation of a vehicle inspection system • Implementation of standards for import of used vehicles	• The vehicle fleet meets high quality safety standards	• Reduction of road injuries and fatalities due to vehicle defects and inadequate safety systems

	Actions	Outcome	Impact
6.Speeding	• Policy and legislation on speed management, including speed limits setting and speed enforcement • Setting of safe and appropriate speed limits on all roads • Enforcement of the speed limits • Implementation of data systems on speeding and speeding related injuries and fatalities • Regular public awareness activities on speeding	• Vehicle drivers comply with speed limits	• Reduction of road injuries and fatalities due to speeding
7.Motorcycle helmets	• Policy and legislation on quality of helmets, on appropriate helmet wearing and on enforcement of helmet use by all motorcyclist (riders and passengers) • Implementation of a compliance system for insuring quality of helmets sold (in order to meet UN Regulation 22 or equivalent national standards) • Enforcement of helmet wearing (for all 2- and 3-wheel powered riders and passengers) • Implementation of data systems on helmet use • Regular public awareness activities on helmet use	• Motorcyclists (2- and 3-wheel powered riders and passengers) appropriately wear an appropriate helmet	• Reduction in head injuries (fatal or severe) of motorcyclists
8.Vehicle occupant protection	• Policy and legislation on installation and use of safety belts in cars • Policy and legislation on quality, installation and use of child restraint systems (CRS) in cars • Policy and legislation on the enforcement of the use of safety belts and CRS • Implementation of a compliance system for insuring the quality of child restraints sold and used • Enforcement of the correct seating position and the use of safety belts and child restraint systems • Implementation of data systems on safety belt and CRS use • Regular public awareness activities on safety belt and CRS use	• Car occupents use correct seating position • Car occupants wear safety belts appropriately • Relevant aged children are appropriately restrained in cars	• Reduction of road injuries and fatalities due to non use of safety belt • Reduction of road injuries and fatalities among children due to non use of child restraint systems • Reduction in the average severity of the injuries
9.Driving under the influence	• Policy and legislation on drink driving management (DUI limits, enforcement, awareness) • Policy and legislation on drug impaired driving management • Enforcement of DUI limits and other alcohol related legislation • Enforcement of drug impaired driving laws • Implementation of data systems on driving under the influence of alcohol and/or other psychoactive substances • Regular public awareness activities on driving under influence of alcohol and psychoactive substances	• Drivers comply with DUI alcohol limits • Drivers do not use psychoactive substances before driving	• Reduction in the number of road injuries and fatalities due to alcohol use by drivers • Reduction of road injuries and fatalities due to psychoactive substance use by driver

	Actions	Outcome	Impact
10.Distraction by mobile phone	• Policy and legislation on the use of mobile phones while driving (phone mode, awareness, enforcement) • Enforcement of mobile phone legislation • Implementation of data systems on distraction by phone • Regular public awareness activities on the distracting effects of mobile phone use	• Drivers are not distracted by mobile phones while driving	• Reduction in the number of road injuries and fatalities caused by distraction from mobile phone use
11.Professional drivers	• Policy and legislation on licence requirements, driving times and rest periods for professional drivers • Implementation of legislation on licence requirements, driving time and rest periods for professional drivers • Enforcement of the legislation for professional drivers	• Professional drivers meet the licence requirements • Professional drivers comply with driving time and rest periods	• Reduction in the number of road injuiries and fatalities involving professional drivers
12. Timely emergency care	• Policy specifiying national (or sub-national) target(s) and parameters for maximum time interval between a road crash resulting in serious injury and the provision of first professional emergency care • Designation of a lead government agency with authority to coordinate pre-hospital and facility-based emergency care • Adequate distribution and resourcing of emergency care services across the country	• National time target parameter for interval between crash and provision of first professional emergency care is within national target • Reduction of the time to professional emergency care for those injured in a road traffic crash	• Reduction in the number of deaths and disability from road traffic crashes due to late or absence of professional emergency care services

Possible measurements and indicators

The table below lists possible measurements for the Actions, Outcome and Impact listed in the previous table. It brings together all the measurements that have already been listed in Chapter 2. The elements included in this table are closely linked to the global targets and indicators. Countries can, however, add other and/or more specific measurements.

The measurements are the base for indicators. It if often useful to segment the indicators by particular groups (transport modes, gender, age, road type, vehicle type, etc.). From a performance assesment perspective, measurements are most useful for 'Outcome" and "Impact". But sometimes measurement for Actions can be a good predictor of the outcome or impact.

	Measurements of Actions	Measurements of Outcome	Measurements of Impact
1. Action plan	• Publication of a national action plan for road safety with targets • Establishment of a lead agency • Proportion of interventions that have been or are being implemented on time • Number of years between updates of the targets • Budget of the lead agency	• Proportion of interventions that have been implemented successfully • Proportion of targets in the national plan that have been achieved	• Number of road injuries and fatalities • Relative number of road injuries and fatalities, taking into account population and exposure
2. Global alignment	• Number of Agreements and Conventions which have been ratified or acceded to	• Number of ratifed/acceded to Agreements which have been fully implemented at national level	• Number of road injuries and fatalities • Relative number of road injuries and fatalities, taking into account population and exposure
3. New roads	• Existence of policies specifying the safety level (e.g. Star Rating) for new roads • Existence of appropriate technical standards for all road users that take into account safety for new roads • Existence of a road safety audit guide or manual for the conduct of road safety audits for new roads • % of km of new roads which are designed and built according to the technical standards • % of km new roads where a road safety audit (preliminary/detailed design stage) has been conducted and safety issues identified are addressed	• % of km of new roads which meet the three-star or better standard for all road users • % of road users (e.g. pedestrians, cyclists, motorcyclists and vehicle occupants) who consider that the new roads are safe	• Relative performance in terms of road injuries and fatalities of new roads compared to existing roads, taking into account exposure • Achievement of fatality rates per kilometre and per kilometre travelled on the new road that are lower than specified (e.g. specific rates; IRTAD data; iRAP Risk Mapping categories; IRF World Road Statistics).
4. Existing roads	• Existence of appropriate technical standards for all road users that take into account safety for existing roads	• % of travel that is on existing roads that meet a three-star rating or better for all road users	• Number of road crash injuries and fatalities on existing roads

	Measurements of Actions	Measurements of Outcome	Measurements of Impact
	• Existence of a road safety inspection/assessment guide or manual for the conduct of road safety audits for inspections/assessments of existing roads • Existence of a nation wide Road Assessment Programme with associated targets for the safety performance for each road user on existing roads • Existence of a resourced plan for the safety improvement of existing roads • Existence of a dedicated long-term budget for safer roads that will meet the desired existing road target by 2030 • % of km on high-risk / one or two-star existing roads that are being improved annually to meet the technical standards for all road users • % of km of existing roads that have undergone a road safety inspection/ assessment over a five-year period with appropriate corrective safety treatments implemented	• % of road users (e.g. pedestrians, cyslists, motorcyclists and vehicle occupants) who consider that existing roads are safe	• Relative performance (before and after) in terms of road injuries and fatalities on existing roads that have been upgraded, taking into account exposure • Fatality and injury rates per kilometre and per kilometre travelled on existing roads that are lower than specified targets (e.g. specific rates; IRTAD data; iRAP Risk Mapping categories, IRF World Road Statistics).
5. Vehicle standards	• Existence of high quality safety standards for produced and imported vehicles • Existence of high quality safety standards for registered vehicles • % of newly produced vehicles that are checked for compliance with standards • % of imported vehicles that are checked for compliance with standards • % of registered vehicles that are checked for compliance with standards	• % of entire vehicle fleet that meets the high quality safety standards	• Number of road injuries and fatalities that are due to vehicle defects and inadequate safety systems • Proportion of road injuries and fatalities that are due to vehicle defects and inadequate safety systems, taking into account exposure and the size of the vehicle fleet
6. Speeding	• Existence of legislation on speed limits • Existence of legislation on speed enforcement • % of km of roads for which safe and appropriate speed limits have been set • % of the population who consider that the speed limits are appropriate • Number of vehicles checked for compliance with speed limits • Existence of data systems to speeding • Existence of data systems on speeding related injuries and fatalities • Budget spent on awareness activities on dangers of speeding	• % of vehicle drivers complying with speed limits • % of vehicle drivers declaring to have speeded in the last 30 days • % of vehicle drivers declaring that they find speeding acceptable	• Number of road injuries and fatalities due to speeding • Proportion of speeding as contributing factor within the total number of road injuries and fatalities
7. Motorcycle helmets	• Existence of legislation on quality of helmets for motorcyclists • Existence of legislation on appropriate helmet wearing for motorcylists • Existence of legislation on enforcement of helmet use by all motorcyclists	• % of motorcyclists appropriately wearing an appropriate helmet • % of motorcyclists declaring to always wear a helmet	• Number of head injuries (fatal or severe) of motorcyclists

	Measurements of Actions	Measurements of Outcome	Measurements of Impact
	• Existence of a system that assesses compliance of helmets against quality standards • % of motorcycle helmets sold/registered complying with the quality standards • % of motorcylists agreeing with the need to wear helmets that comply with the quality standards • Number of motorcyclists checked for compliance with wearing helmets • Existence of data systems on helmet use • Budget spent on public awareness activities on helmet use	• % of motorcyclists declaring that not wearing a helmet is acceptable	• Number of head injuries (fatal or severe) of motorcyclists, taking into account exposure
8. Vehicle occupant protection	• Existence of legislation on appropriate fitment and use of safety belts for car drivers and passengers • Existence of legislation on appropriate fitment and use of child restraint systems (CRS) in cars • Existence of legislation on enforcement of safety belt wearing and CRS use • Existence of a system that assesses compliance of child restraints against quality standards • % of child restraints sold/used that comply with the quality standards • Number of vehicle occupants checked for compliance with safety belt use • Number of child vehicle occupants checked for compliance with child restraint use • Existence of data systems on the use of safety belts and CRS • Budget spent on public awareness activities on safety belts and CRS	• % of motor vehicle drivers correctly wearing a safety belt • % of motor vehicle passengers correctly wearing a safety belt • % of children correctly fastened in CRS (or safety belts, from the appropriate age/size) • % of car drivers and passengers declaring to always fasten their safety belt while driving • % of car drivers declaring to always fasten children in an appropriate CRS in their car	• Number of road injuries and fatalities due to incorrent or non use of the safety belt • Number of road injuries and fatalites due to incorrect or non use of a child restraint system • Average severity of the injuries of vehicle occupants in a road crash • Proportion of inappropriate or non use of restraints as contributing factor within the total number of road injuries and fatalities
9. Driving under the influence	• Existence of legislation specifying legal maximum blood alcohol concentration (BAC) levels • Existence of legislation specifying legal maximum levels of psychoactive substances • Existence of legislation specifying enforcement of BAC limits and other DUI legislation • Number of drivers checked for compliance with alcohol DUI limits • Number of drivers tested for pyschoactive substance use • Existence of data systems on driving under the influence of alcohol and/or other psychoactive substances	• % of vehicle drivers complying with alcohol DUI limits • % of vehicle drivers declaring to have drunk alcohol over the legal limit before driving (in the last 30 days) • % of vehicle drivers declaring to have used psychoactive substances before driving (in the last 30 days)	• Number of road injuries and fatalities due to illegal alcohol level of driver • Number of road injuries and fatalites due to psychoactive substance level of driver • Proportion of alcohol consumption as a contributing factor within the total number of road injuries and fatalities • Proportion of driver-psychoactive substance use as a contributing factor

	Measurements of Actions	Measurements of Outcome	Measurements of Impact
	• Existence of data systems on road injuries and fatalities caused by impaired driving • Budget spent on public awareness activiites related to driving under influence of alcohol and psychoactive substances		within the total number of road injuries and fatalities
10. Distraction by mobile phone	• Existence of legislation on the use of mobile phones while driving • Existence of legislation on enforcement of mobile phone use while driving • Number of drivers checked for compliance with mobile phone legislation • Existence of data systems on distraction by phone • Existence of data systems on road injuries and fatalities caused by distraction by mobile phone • Budget of public awareness activities on the distracting effects of mobile phone use	• % of vehicle drivers that are using their mobile phone (handheld) while driving • % of vehicle drivers declaring to have used their mobile phone for phoning while driving in the last 30 days • % of vehicle drivers declaring to have used their mobile phone for texting while driving in last 30 days	• Number of road injuries and fatalities due to distraction by mobile phone • Proportion of distraction by phone as contributing factor within the total number of road injuries and fatalities
11. Professional drivers	• Existence of legislation on licence requirements for professional drivers • Existence of legislation on driving times and rest periods for professional drivers • Existence of legislation of enforcement of regulations for professional drivers • % of professional drivers undergoing training or retraining • % of trcuks equipped with adeqiuate recording systems for driving and rest periods • % of professional drivers that is checked for compliance with regulation on driving times and rest periods	• % of professional drivers who meet all licence requirements • % of professional drivers who comply with requirements for driving time and rest periods	• Number of road injuries and fatalities involving professional drivers • Relative number of road injuries and fatalities involving professional drivers, taking into account population and exposure
12. Timely emergency care	• Existence of a policy specifying national (or sub-national) time targets and parameters for the maximum interval between a road crash resulting in serious injury and the provision of first professional emergency care • Use of appropriate methods and clear definitions to register and document time intervals between a road crash (including time of crash occurrence, arrival of police, call fro emergency care, etc.) and first professional emergency care delivered to the injured persons • Existence of a designated agency with authority to coordinate emergency care, including pre-hospital and facility-based emergency care • % of severe injury crashes where no emergency care services were provided	• % of road traffic crashes resulting in serious injury where the time interval to professional emergency care did not exceed the national target • % of injured in road crashes who received timely emergency care at the scene, during transport or at the facility	• Proportion of the number of road traffic deaths among those severely injured in road traffic services • Proportion of the number of road traffic deaths among those presented to hospitals for road traffic injuries

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