DECADE OF ACTION FOR ROAD SAFETY 2011-2020

Road safety in the Eastern Mediterranean Region

Facts from the *Global status report on road safety 2018*

World Health Organization
REGIONAL OFFICE FOR THE Eastern Mediterranean

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Contents

1. Road safety in the Eastern Mediterranean Region: key facts

- Road traffic injuries resulted in an estimated 120 362 deaths in the Eastern Mediterranean Region in 2016, which represents almost 9% of global road traffic deaths.
- The Eastern Mediterranean Region has the third highest road traffic death rate among WHO regions, despite being the second least motorized region in the world.
- Road traffic injury is a problem for all countries in the Region regardless of their income level. While middle-income countries account for over 80% of the Region's road traffic deaths, high-income countries – unlike the global trend – have an overall road traffic death rate that is higher than their less affluent neighbours. This death rate is three times the average rate in high-income countries globally.

- The estimated gross domestic product (GDP) lost as a result of road traffic crashes (reported by seven countries only) ranges from a low of 0.05% to a high of 6.6%.
- The burden of road traffic deaths is disproportionately borne by males (81%) and by those aged 29 years or younger (44%).
- Road traffic injuries are the primary cause of death among adolescents (aged 10–19 years) in high-income countries and the second most common cause of death among adolescents in low- and middle-income countries.
- Vulnerable road users (pedestrians, motorcyclists and cyclists) account for 51% of all road traffic deaths, while drivers and passengers of four-wheeled vehicles account for 39% of road traffic deaths.
- The majority of countries in the Region have road safety lead agencies, with roles and responsibilities that vary between: coordination of national road safety efforts; development and revision of legislation; and monitoring and evaluation.
- Road traffic injury prevention among young people is a priority in the national adolescent health plans of several Member States in the Region, which have been updated based on the Global Accelerated Action for Health of Adolescents (AA-HA!).
- Most existing national road safety strategies in the Region fail to set measurable targets.
- None of the countries in the Region have national laws that meet best practice criteria on all five key road safety behavioural risk factors (speeding, drink driving, and non-use of motorcycle helmets, seat-belts and child restraints).
- None of the countries in the Region apply all eight United Nations priority vehicle safety standards.
- Fifteen countries report having national policies for the safety of pedestrians and cyclists,

and eight countries have policies to encourage walking and cycling as alternatives to car travel.

- Thirteen countries in the Region have a single national emergency telephone number. Eleven countries report having a formal, government-ratified certification pathway for pre-hospital care providers.

2. Background: the international road safety context

Worldwide, road traffic injuries kill approximately 1.35 million people every year. An additional 20–50 million people are injured in non-fatal crashes annually, with many sustaining disabilities as a result of their injuries. Road traffic injuries represent the eighth leading cause of death for all age groups and the leading cause of premature death for those aged 5–29 years worldwide. Despite the significant global burden of road traffic injuries, the rates of death relative to the size of the world's population have remained stable in recent years.

With the aim of reducing road traffic injuries and deaths worldwide the United Nations General Assembly adopted resolution A/RES/64255/ in 2010 which declared the Decade of Action for Road Safety 2011–2020.[1] The global action plan for the Decade provides an overall framework for road safety activities based on five pillars: road safety management; safer roads and mobility; safer vehicles; safer road users; and post-crash response. In September 2015 all United Nations Member States adopted the Sustainable Development Goals (SDGs), which include two specific targets on road safety, as part of the 2030 Agenda for Sustainable Development.[2] In 2017, WHO, in close consultation with experts and Member States, developed a set of 12 voluntary global performance targets for road safety and service delivery mechanisms. The 12 targets, endorsed by the United Nations General Assembly in April 2018 (resolution A/RES/70260/), provide a clear framework to guide and monitor the development and implementation of road safety interventions.[3]

WHO's series of global status reports on road safety serve as an official tool for monitoring the Decade of Action, with the fourth report released in 2018. The *Global status report on road safety 2018* (GSRRS 2018) has the following objectives: to document the annual number of deaths resulting from road traffic injuries in order to establish an assessment of progress towards the SDG targets for road safety and the Decade of Action; to review institutional management practices including target setting; to present an analysis of national legislation on key road

[1] United Nations Road Safety Collaboration, Global Plan for the Decade of Action for Road Safety 2011–2020, available at: http://www.who.int/roadsafety/decade_of_action/en/.

[2] http://www.globalgoals.org/.

[3] Developing global targets for road safety risk factors and service delivery mechanisms [website]. Geneva: World Health Organization (https://www.who.int/violence_injury_prevention/road_traffic/road-safety-targets, accessed 24 November 2019).

safety risk factors using best practice criteria; to summarize the current state of vehicle standards and regulations as well as road infrastructure; and to examine current progress and challenges in improving post-crash care.

3. Methodology

This factsheet for the Eastern Mediterranean Region draws on data from the GSRRS 2018. It describes the status of road safety in 19 of the 22 countries and territories of the Region, representing 95.5% of the population and comprising five high-income, 12 middle-income, and two low-income countries.[1]

The GSRRS 2018 was developed through an iterative and consultative process with participating Member States. In the first phase, requests for data were sent out through a survey administered in 2017 by WHO headquarters to regional and national data coordinators appointed in each WHO region or country. The self-administered survey contained questions relating to the status of the five pillars of the Decade of Action. Experts from different sectors within each country discussed and came to an agreement on the responses to the survey questions. Based on the reported number of road traffic deaths and the source of data, adjustments were made to account for potential underreporting due to differences in definitions as well as limitations in civil registration and vital statistics (CRVS). This process resulted in an estimated number of fatalities. A final consultation was then carried out to enable Member States to respond to any changes that resulted from the verification and validation process. This consultation also provided Member States with an opportunity to comment on the WHO estimates for road traffic fatalities which are often much higher than the official statistics.

More information on the methodology is outlined in Explanatory note 1 in the GSRRS 2018.[2]

[1] Nineteen participating countries/areas; Afghanistan, Egypt, Iran (Islamic Republic of), Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and West Bank and Gaza Strip.

[2] Global status report on road safety 2018. Geneva: World Health Organization; 2018 (https://www.who.int/violence_injury_prevention/road_safety_status/2018/en/).

4. Burden of road traffic injuries in the Eastern Mediterranean Region

The Region has the third highest road traffic death rate in the world

In 2016, an estimated 120 362 people died from road traffic injuries in the Eastern Mediterranean Region constituting almost 9% of the world's estimated road traffic deaths despite the Region accounting for only 5% of the world's vehicles. Between 2013 and 2016 the road traffic death rate in the Region remained relatively stable.

The overall road traffic death rate in the Region is 18 deaths per 100 000 population, which, although comparable to the global average of 18.2 per 100 000 population, represents the third highest road traffic death rate in the world after the African (26.6 per 100 000 population) and South-East Asia (20.7 per 100 000 population) regions (Fig. 1).

Estimated road traffic death rates vary greatly among countries in the Region, ranging from a low of 5.3 to a high of 28.8 deaths per 100 000 population. Only seven countries have an estimated road traffic death rate lower than the regional average of 18 deaths per 100 000 population.

Only four countries/areas (Islamic Republic of Iran, Qatar, Sudan, and West Bank and Gaza Strip) reported data on the estimated percentage of people who incur permanent disability as a result of road accidents. These percentages ranged from 1% to 19%. This wide range is an indication of data limitations, including the lack of a uniform definition and standardized methodology.

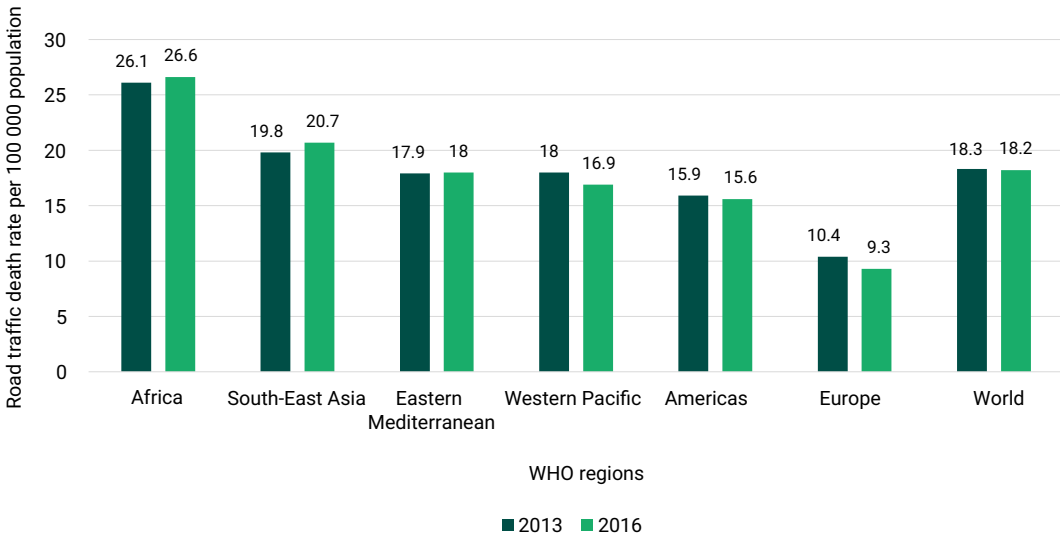

Fig. 1. Road traffic death rates per 100 000 population, WHO regions and the world, 2013 and 2016

High-income countries in the Region have road traffic death rates three times higher than the global average for similar countries

The overall estimated road traffic death rates for low- and middle-income countries in the Region (18.6 and 17.4 deaths per 100 000 population, respectively) are lower than the global average for similar countries (27.5 and 19.2 deaths per 100 000 population, respectively). The overall estimated road traffic death rate for high-income countries in the Region (23.6 deaths per 100 000 population) is higher than their low- and middle-income neighbours. This regional rate is three times the average rate of high-income countries globally (8.3 deaths per 100 000 population). This differs from what is observed worldwide, where the rate of road traffic deaths per 100 000 population generally decreases as income increases (Fig. 2).

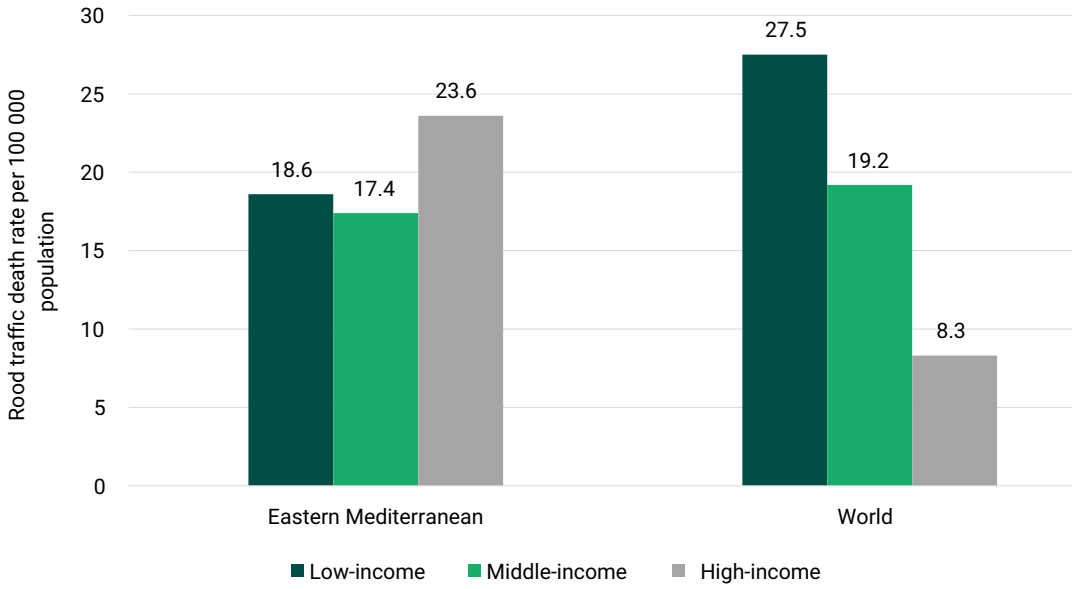

Fig. 2. Road traffic death rates per 100 000 population by country income level, Eastern Mediterranean Region and the world[1]

The vast majority of road traffic deaths occur in middle-income countries

The distribution of road traffic deaths varies by income level in the Region (Fig. 3). Low-income countries bear a disproportionate number of deaths relative to their level of motorization, representing 8% of regional road traffic deaths despite having only 1% of the Region's vehicles. While accounting for the highest proportion of the Region's population and vehicles (84% and 83%, respectively), middle-income countries account for 81% of regional road traffic deaths. Contrary to the global trend, high-income countries in the Region account for a slightly larger percentage of road traffic deaths than their proportion of the population. Compared to other high-income countries in the world, they have a relatively high percentage of road

[1] Country income levels are based on 2017 World Bank classifications for average annual income per person, where low-income = US$ 1005 or less, middle-income = US$ 1006 to US$ 12 235, and high-income = US$ 12 236 or more.

deaths in relation to vehicle concentration. This could indicate that rapid economic growth and subsequent motorization in high-income countries of the Region has not been complemented by the timely introduction of appropriate interventions.

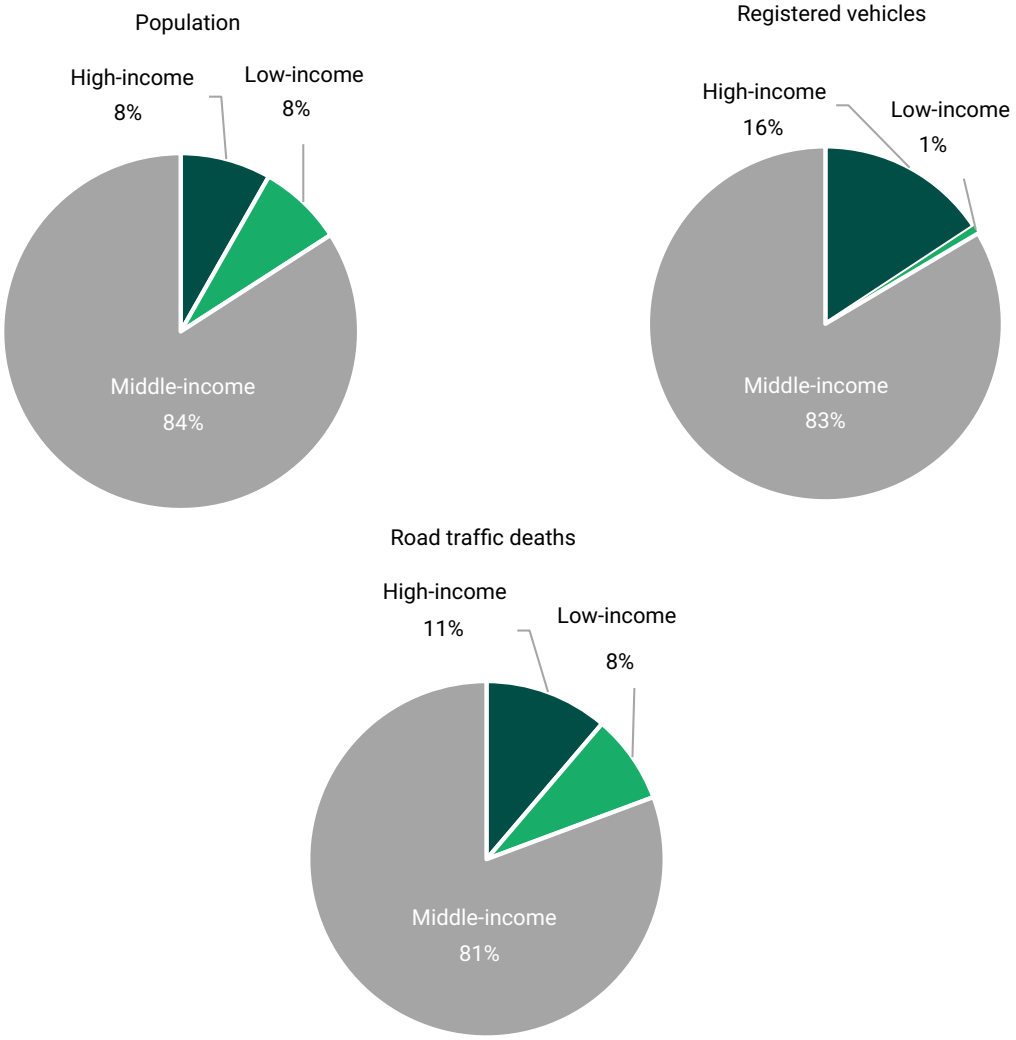

Fig. 3. Proportion of population, road traffic deaths and registered motor vehicles by country income level, Eastern Mediterranean Region, 2016

Males and younger age groups are hardest hit

Road traffic death rates in the Region vary by sex and age. The number of road traffic deaths by sex was reported by 17 of the 19 participating countries. Males account for the majority (81%) of reported road traffic deaths in the Region. This overrepresentation could be partly attributed to the fact that drivers in the Region are predominately male.[1]

[1] Eastern Mediterranean status report on road safety: call for action. Cairo: WHO Regional Office for the Eastern Mediterranean; 2010 (http://applications.emro.who.int/dsaf/dsa1045.pdf).

The number of road traffic deaths by age was reported by only 10 countries. Around 67% of reported road traffic deaths occur among those under the age of 45 years, cutting lives short and causing significant economic losses. Those aged 15–29 years account for the highest proportion of reported road traffic deaths in the Region. Fig. 4 shows the distribution of reported road traffic deaths by age in 10 countries in the Region in 2016.

Given that it is the young and economically productive who bear the greatest burden of road traffic deaths, prevention of road traffic injury should be prioritized in the Region. Significant reduction in road traffic deaths can be achieved by developing road safety interventions targeting males and younger age groups.

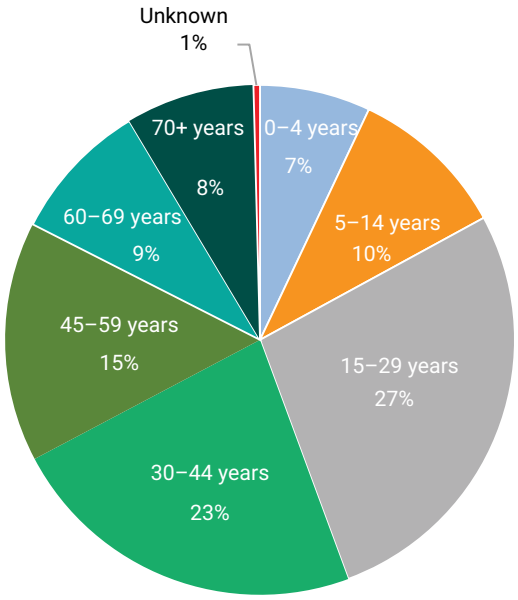

Fig. 4. Distribution of reported road traffic deaths by age group in 10 countries of the Region, 2016

Both vulnerable road users and car occupants are heavily affected

Vulnerable road users (pedestrians, drivers/passengers of motorized two- or three-wheelers and cyclists) account for around 51% of all road traffic deaths in the Region (Fig. 5). Pedestrians account for 34% of all deaths (a 7% increase since 2013), the second highest proportion in the world after the African Region. Motorized two- or three-wheelers represent 15% of the Region's road traffic deaths, a 4% increase since 2013.

Similar to the findings in the GSRRS 2015, car occupants constitute a significant group of road traffic deaths in the Region, representing 39% of road traffic deaths (down from 45% in 2013). This is the third highest proportion after Europe and the African regions.

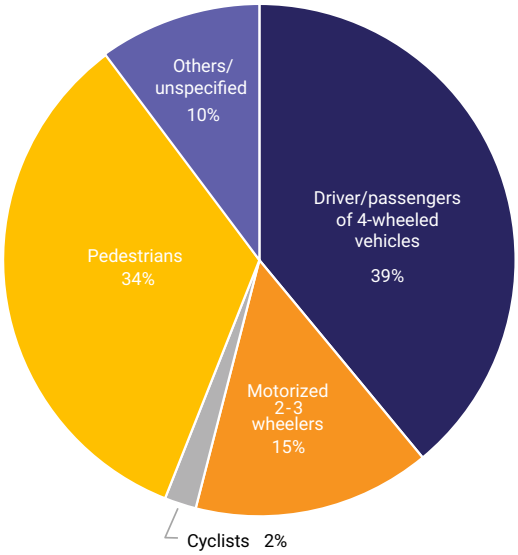

Fig. 5. Distribution of road traffic deaths by road user type in the Region, 2016

Road traffic deaths by road user type vary by income

Reported road traffic death rates for occupants of four-wheeled cars and light vehicles are higher in high-income countries compared to middle-income countries in the Region (Fig. 6). This could be partly attributed to differences in the main form of mobility and vehicle usage patterns. High-income countries in the Region need to develop policies that promote a shift to safer modes of transport and encourage the use of public transport.

Pedestrians account for almost 25% of road traffic deaths in countries of the Region, regardless of income level. Policies need to be enacted to protect pedestrians and infrastructure should be built to separate them from motorized traffic.

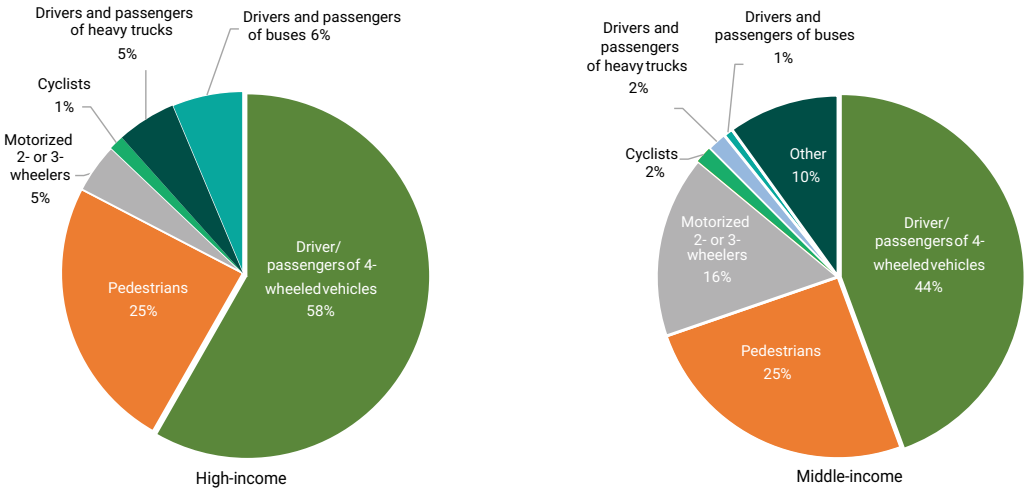

Fig. 6. Proportion of reported road traffic deaths by type of road user in three high-income and 10 middle-income countries of the Region, 2016

Data on road traffic deaths by road user type were reported by only 13 countries, none of which are low-income. Approximately 10% of reported road traffic deaths in middle-income countries were classified as "other", which suggests that many countries need to improve data collection and reporting.

Understanding the distribution of road traffic deaths by type of road user has important implications when designing appropriate interventions in the Region. The distribution of road traffic deaths by road user type varies greatly among the 13 countries that provided data, as shown in Fig. 7.

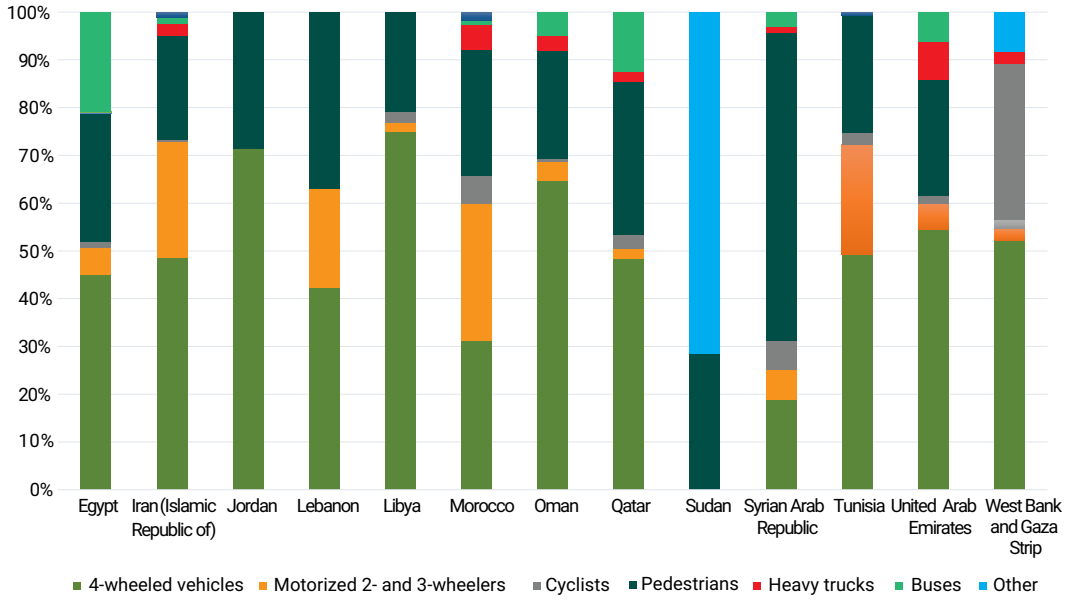

Fig. 7. Distribution of reported road traffic deaths by type of road user, in selected countries/areas of the Region, 2016

5. Institutional management

Given the multifaceted nature of road safety, the establishment of national lead agencies with the authority to guide and coordinate road safety efforts across multiple sectors and stakeholders is vital to success. Agencies must have the appropriate resources and adequate funding to be functional and operational.

Currently, 17 countries in the Region report having a designated lead agency for road safety, of which 11 are funded. In 13 countries this takes the form of a single government ministry or an entity situated within a government ministry. In the remaining four countries the national road safety agency is a standalone entity. Roles and responsibilities of the lead agencies vary between: coordination of national road safety efforts; development and revision of legislation; and monitoring and evaluation.

Road safety strategies have been developed in 14 countries in the Region, of which 11 are fully or partially funded. A successful road safety strategy should involve a set of realistic, time-bound and measurable targets to guide policies and inform better use of resources through ongoing monitoring. Few countries in the Region have tangible road safety targets. Eight countries have targets to reduce road traffic deaths and five have targets for non-fatal injuries. Fig. 8 shows the number of participating countries that have included in their national road safety strategies: a fatality reduction target; a non-fatal injury reduction target; and targets related to the five road safety key risk factors (speeding, drink-driving, seat-belt use, child restraint use and motorcycle helmet use).

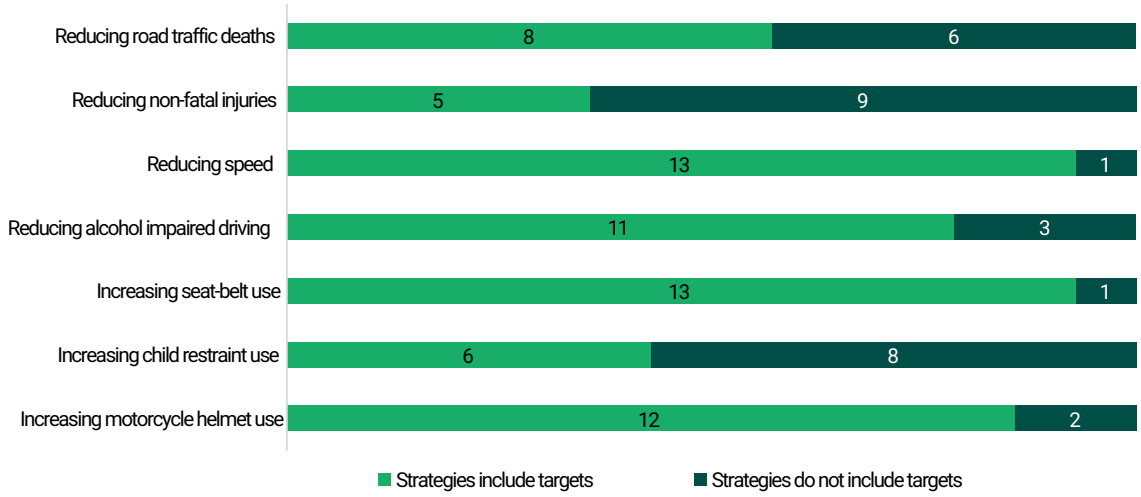

Fig. 8. Number of countries with targets included in road safety strategies in the Region, 2017

6. Legislation and road user behaviour

Enacting and enforcing road safety legislation on the five key behavioural risk factors can result in a significant reduction in road traffic deaths and injuries. In addition, drug-driving and mobile phone use are emerging road safety risk factors. However, there is still limited evidence surrounding the effectiveness of interventions targeting drug-driving and mobile phone use.

To be effective, legislation needs to meet best practice criteria (Box 1).[1] Currently 11 countries in the Region have laws that meet best practice for at least one of the five key behavioural risk factors (Table 1). None of the participating countries have laws that meet best practice criteria for all five key risk factors.

[1] The criteria used to determine best practices for legislation have been updated since GSRRS 2015.

Box 1. Best practice criteria used to assess legislation in GSRRS 2018

Speed: Presence of a national speed limit, urban speed limits lower than or equal to 50 km/h and local authorities have the power to modify speed limits to different contexts (such as the presence of schools or high concentrations of vulnerable road users).

Drink-driving: Presence of a national drink-driving law based on a blood alcohol concentration of ≤ 0.05 g/dl for the general population and ≤ 0.02 g/dl for novice drivers.

Motorcycle helmets: Presence of a national motorcycle helmet law that applies to both drivers and passengers, on all road types and to all engine types, and requires the helmet to be properly fastened and refers to a particular helmet standard.

Seat-belts: Presence of a national seat-belt law that applies to drivers, front and rear seat passengers.

Child restraints: Presence of a national child restraint law that requires children to use a child restraint at least until 10 years of age or 135 cm height, and restricts children under a certain age or height from sitting in front seat and refers to a particular child restraint standard.

Table 1. Number of countries and percentage of population covered by legislation meeting best practice criteria in the Region

Number of risk factors covered by laws	Number of countries	Total population covered
1 risk factor	6	27.7%
2 risk factors	2	7%
3 risk factors	2	2.5%
4 risk factors	1	0.9%
5 risk factors	0	0%

Effectiveness of legislation depends on the level of enforcement. Fig. 9 shows the number of countries in the Region with laws on each of the five risk factors, and whether these are aligned with best practice and well enforced. While some countries have laws that meet best practice criteria, inadequate enforcement is limiting the impact of such legislation on reducing injuries and deaths.

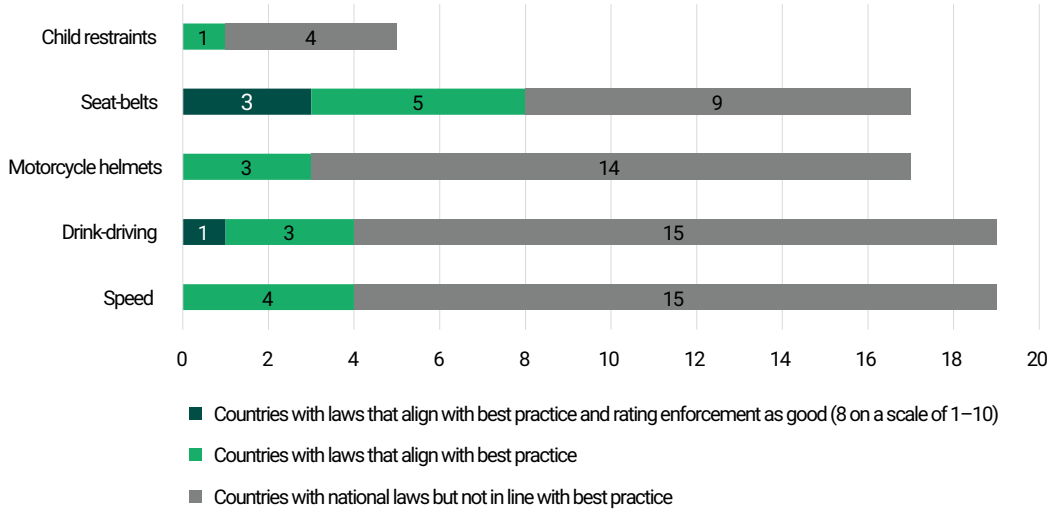

Fig. 9. Number of countries with legislation on five key risk factors, alignment with best practice criteria, and enforcement, 2017 [1]

Managing speed

Speeding contributes significantly to the risk and severity of road traffic crashes. A 5% cut in average speed can result in a 30% reduction in fatal crashes.[2] The establishment and implementation of effective speed management measures is crucial to road safety.

Three best practice criteria were used in the assessment of legislation on speed laws: the presence of a national speed limit law; urban speed limits lower than or equal to 50 km/h; and local authorities having the power to modify speed limits to different contexts, such as the presence of schools or high concentrations of vulnerable road users. While all participating countries in the Region have a national speed limit law, only four have laws that meet best practice criteria (Lebanon, Somalia, Sudan and Tunisia). Currently, only seven countries report having an urban speed limit equal to or lower than 50 km/h, and only 10 countries allow local authorities to modify speed limits.

Enforcement of speed limit laws can be manual or automated;[3] however, evidence shows that automated enforcement is more effective at reducing speeds. The

[1] Qualitative assessment, based on the subjective opinion of road safety experts who participated in providing country data in GSRRS 2018. The score system used a scale of 0–10, where 8 or above was considered "good".

[2] Managing speed. Geneva: World Health Organization; 2017 (www.who.int/violence_injury_prevention/publications/road_traffic/managing-speed/en/).

[3] Manual speed control usually involves a stationary observation unit (a marked or unmarked police car) equipped with a speed measurement device (e.g. radar or laser device) and, further down the road, another police unit to stop the identified car and issue a fine to the driver. Automatic speed enforcement uses fixed and mobile cameras. Fixed cameras are installed in a specific location, usually a box mounted on a pillar. Mobile cameras are installed in police vehicles, operated by trained police officers.

predominant types of speed control reported in the Region are: a combination of manual and automated in eight countries; manual only in five countries; and automated only in four countries. Only three countries report that enforcement of their speed laws is "good" (8 or above on a 0–10 scale).

None of the four countries with laws that meet best practice criteria report their enforcement of speed laws as "good" (8 or above on a 0–10 scale).

Reducing drink-driving

Alcohol increases both the risk and severity of a road traffic crash. Reducing blood alcohol concentration (BAC) from 0.1 g/dl to 0.05 g/dl may contribute to a reduction of 6–18% in alcohol-related road traffic fatalities.[1]

Three best practice criteria were used in the assessment of legislation on drink-driving laws: presence of a national drink-driving law, based on a BAC of ≤ 0.05 g/dl for the general population and a BAC of ≤ 0.02 g/dl for novice drivers. While all participating countries have national drink-driving laws in place, 14 countries do not specify a BAC limit, which makes it difficult to enforce the law, and one country has a specified BAC limit not in line with the best practice criteria range. Only four countries (Lebanon, Morocco, Tunisia and United Arab Emirates) meet best practice criteria for drink-driving laws.

Enforcing a drink-driving law can result in a 20% reduction in the number of road deaths.[2] Enforcement of drink-driving laws in the Region is generally low, with only five countries rating their enforcement as "good" (8 or above on scale of 0–10). Random breath testing is highly effective in deterring drinking and driving; however, it is only used in 10 countries.

Out of the four countries with laws that meet best practice criteria, only one country rates its enforcement as "good" (8 or above on a 0–10 scale).

Increasing motorcycle helmet use

Correct helmet use can lead to a 42% reduction in the risk of fatal injuries and a 69% reduction in the risk of head injuries.[3] Five best practice criteria were used in the assessment of legislation on motorcycle helmet use: the presence of a national motorcycle helmet law which applies to both driver and passengers on all road types and all engine types, requires the helmet to be properly fastened, and refers

[1] Fell JC, Voas RB. The effectiveness of reducing illegal blood alcohol concentration (BAC) limits for driving: evidence for lowering the limit to .05 BAC. J Safety Res. 2006;37(3):233–43.

[2] Infographics on global road safety 2013 [website]. Geneva: World Health Organization; 2013 (https://www.who.int/violence_injury_prevention/road_safety_status/2013/facts/en/, accessed 24 November 2019).

[3] Liu BC, Ivers R, Norton R, Boufous S, Blows S, Lo SK. Helmets for preventing injury in motorcycle riders. Cochrane Database Syst Rev. 2008;23;(1):CD004333.

to a particular helmet standard. Currently, 17 out of the 19 participating countries in the Region have a national motorcycle helmet law. However, only three countries/areas (Lebanon, Morocco, and West Bank and Gaza Strip) meet all five best practice criteria. Enforcement of helmet-wearing laws needs to be improved as only three countries rate their enforcement as "good" (8 or above on a 0–10 scale).

None of the three countries with laws that meet best practice criteria report their enforcement of motorcycle helmet use laws as "good" (8 or above on a 0–10 scale).

Increasing seat-belt use

Seat-belts are highly effective in saving lives and preventing injuries. Wearing a seat-belt reduces the risk of death among drivers and front seat passengers by 45–50%, and the risk of death and serious injuries among rear seat passengers by 25%.[1] Two best practice criteria were used in the assessment of legislation on seat-belt use: presence of a national seat-belt law, which applies to front and rear seat occupants. Currently, 17 out of the 19 participating countries in the Region have a national seat-belt law. However, only eight countries/areas (Islamic Republic of Iran, Lebanon, Libya, Oman, Saudi Arabia, Tunisia, United Arab Emirates, and West Bank and Gaza Strip) have a seat-belt law that meets best practice criteria. Enforcement of seat-belt laws is poor, with only four countries rating their enforcement as "good" (8 or above on a scale of 0–10).

Out of the eight countries with laws that meet best practice criteria, only three countries rate their enforcement as "good" (8 or above on a 0–10 scale).

Increasing child restraint use

Correct use of child restraints can reduce the death rates in car crashes by 71% among infants and by 54% among young children.[2] Four best practice criteria were used in the assessment of legislation on child restraint use: the presence of a national child restraint law which requires children to use a child restraint at least until 10 years of age or 135 cm height, restricts children under a certain age or height from sitting in the front seat, and refers to a particular child restraint standard. Only five countries/areas in the Region have a national child restraint law, and only the West Bank and Gaza Strip has a law that is in line with best practice criteria. None of the countries rate their enforcement as "good" with regard to child restraint laws.

[1] Elvik R, Høye A, Vaa T, Sørensen M, editors. The handbook of road safety measures. 2nd ed. Bingley, UK: Emerald Group Publishing Limited; 2009.

[2] World report on road traffic injury prevention. Geneva: World Health Organization; 2004 (https://www.who.int/violence_injury_prevention/publications/road_traffic/world_report/safety_restraints_en.pdf?ua=1).

Reducing distracted driving

The use of mobile phones while driving can significantly increase the risk of being involved in a crash. With the exception of low-income countries, all participating countries in the Region have national legislation regulating mobile phone use while driving. Of these, 16 countries in the Region have legislation that prohibits the use of handheld mobile phones (including text messaging). Only five of these countries have legislation prohibiting the use of hands-free mobile phones.

Reducing drug-driving

Drug-driving is increasingly linked to road traffic crashes and deaths. Eighteen countries have a national law that restricts the use of drugs while driving. However, only the United Arab Emirates specifies a list of drugs under such legislation.

7. Safer roads

Design standards and review of roads

Investment in road infrastructure is critical for improving road safety by preventing crashes and minimizing their consequences. Currently, 18 out of the 19 participating countries report carrying out full or partial road safety audits or star ratings for new roads. Twelve countries in the Region report doing safety assessments or star rating on existing roads. The findings also indicate that 14 countries have a systematic programme in place for targeting and upgrading high-risk locations on existing roads.

Safer roads and sustainable transport

Approximately 51% of all road traffic deaths in the Region occur among pedestrians, motorcyclists and cyclists. Greater attention should be directed towards protecting vulnerable road users in the Region. Fifteen countries report having national policies for the safety of pedestrians and cyclists.

Sixteen countries report having policies to invest in urban public transport, and eight countries report having national or subnational policies to encourage walking and cycling as an alternative to car travel.

8. Safer vehicles

Improvements in vehicle safety can contribute significantly to reducing road traffic deaths and injuries. Eight vehicle safety standards of the United Nations World Forum for Harmonization of Vehicle Regulations have been prioritized for implementation by countries (Box 2).[1]

Despite the potential benefits, data on vehicle standards reveal that none of the countries in the Region apply all eight United Nations priority vehicle safety standards. Egypt applies seven of the standards (with the exception of motorcycle anti-lock braking systems).

Box 2. United Nations priority safety standards for vehicles

1–2: Frontal impact protection and side impact protection (UN regulations 94 and 95) ensures that cars withstand the impacts of a frontal and side impact crash when tested at a certain speed. These crashworthiness regulations help to ensure that occupants withstand the impact of front and side impact crashes.

3: Electronic stability control (UN regulation 140) prevents skidding and loss of control in cases of oversteering or understeering and is effective in reducing crashes and saving lives. It is effective in avoiding single car and roll-over crashes, reducing fatal and serious injuries.

4: Pedestrian front protection (UN regulation 127) provides softer bumpers and modifies the front end of vehicles which can reduce the severity of a pedestrian impact with a car.

5–6: Seat-belts and seat-belt anchorages (UN regulations 14 and 16) ensure that seat-belts are fitted in vehicles when they are manufactured and assembled and that seat-belt anchor points can withstand the impact incurred during a crash, minimizing the risk of belt slippage and ensuring that passengers can be safely removed from their seats if there is a crash.

7: Child restraints (UN regulation 129) require that a child seat is in place with the adult seat-belt and that ISOFIX child restraint anchorage points are fitted to secure the restraint.

8: Motorcycle anti-lock braking systems (UN regulation 78) help the rider to maintain control during an emergency braking situation and reduce the likelihood of a road traffic crash and subsequent injury.

9. Post-crash care

Efficient, timely post-crash care is key to saving lives and reducing injuries after road traffic crashes. Effective care of the injured requires timely care at the scene, prompt transport to appropriate emergency and surgical hospital facilities, and early access to rehabilitation services.

Rapid access to pre-hospital care can reduce road traffic deaths and prevent serious injuries. Currently, 13 countries in the Region have a single national emergency telephone number; four countries have multiple emergency care service access numbers that, taken together, provide total country coverage; and one country has multiple emergency care service access numbers that provide partial coverage.

[1] The World Forum for Harmonization of Vehicle Regulations is the global body responsible for the development of passenger car safety standards. For more information see: www.unece.org/trans/main/welcwp29.html.

The presence of pre-hospital care at the crash scene can reduce the risk of death in injured patients. Pre-hospital care providers should have formal training in pre-hospital care, stabilization and the transport of injured people. Eleven countries in the Region report having a formal, government-ratified certification pathway for pre-hospital care providers.[1] Effective emergency care at hospitals requires specially trained staff for managing trauma patients. The majority of countries in the Region report having some type of emergency specialty for doctors; however, specialized programmes for nurses are reported in only 12 countries.

10. Road safety data in the Region

High-quality data are essential for road safety management. Without reliable data it is difficult to determine the burden of road traffic injuries, to design and implement appropriate interventions and to monitor progress in reducing road traffic injuries. Good quality vital registration data are used as a source of information on road traffic deaths as they are a record of all officially registered deaths.[2] Police data also offer reliable information on road traffic deaths. Linking data sources can improve data quality and fatality reporting by identifying and compensating for levels of underreporting from different sources. Approximately 74% of reported road traffic deaths are based on police records, 10% are based on health facility records, and 16% on a combination of sources.

Certain limitations need to be addressed to improve the quality and reliability of data in the Region.

- *Underreporting and missing data are serious issues.* The overall reported number of road traffic deaths in the Region is around half the estimated number for the same year, although variations between the reported and estimated number of deaths are seen across countries. Only 13 countries reported road traffic deaths by road user group and only 10 countries reported road traffic deaths by age.

[1] A formal certification pathway for pre-hospital providers refers to a government or government-endorsed pathway for medics, technicians, nurses or others to be specifically certified as pre-hospital providers.

[2] Global status report on road safety 2015. Geneva: World Health Organization; 2015 (https://www.who.int/violence_injury_prevention/road_safety_status/2015).

Reliable and comprehensive data on the burden of road traffic crashes and risk factors are essential for the prioritization and development of context-specific interventions.

- *The 30-day definition for road traffic death needs to be enforced by police*, and CRVS data (from health records or combined police–health sources, or any sector using ICD codes) should follow the unlimited time period definition. Nine out of 14 countries/areas that use police data use the 30-day definition (Jordan, Kuwait, Libya, Morocco, Oman, Saudi Arabia, Tunisia, United Arab Emirates, and West Bank and Gaza Strip). In countries using health records or combined sources, only Iraq uses the unlimited time period following crash definition.
- *More information is needed on the non-fatal burden of road traffic crashes.* Reporting on the non-fatal burden of road traffic crashes remains a challenge in the Region. The number of crashes resulting in injuries was reported in 18 countries; however, the definitions used vary greatly across countries. Only four countries/areas (Islamic Republic of Iran, Qatar, Sudan, and West Bank and Gaza Strip) reported data on the estimated percentage of road traffic crash victims with permanent disability. Data on injuries can be used to optimize post-crash services and inform large-scale injury prevention strategies.
- *Only seven countries reported the estimated percentage of GDP lost as a result of road traffic crashes* (Egypt, Islamic Republic of Iran, Jordan, Libya, Qatar, Sudan and Syrian Arab Republic), with estimates ranging from a low of 0.05% to a high of 6.6%. According to WHO, road traffic crashes cost most countries worldwide approximately 3% of their GDP,[1] which suggests that some of the reported figures from countries in the Region are underestimated. It is important to conduct country-level studies on the economic costs of road traffic crashes as well as on the cost-effectiveness of interventions. This will help in advocacy to policy-makers on the need to address road safety, and in prioritization and development of targeted road safety interventions.
- *Data on monitoring and evaluation are lacking.* More effort is needed to collect data on intermediate indicators that provide information on the effectiveness of implementation and enforcement of various legislations. The proportion of annual road traffic deaths attributable to alcohol impairment is reported in only eight countries (Islamic Republic of Iran, Libya, Morocco, Oman, Qatar, Sudan, Tunisia and United Arab Emirates) and estimates vary from 0.3% to 3.7%. The motorcycle helmet wearing rate for drivers is reported in four countries (Islamic Republic of Iran, Morocco, Oman and Pakistan) and the seat-belt wearing rate is reported in four countries (Islamic Republic of Iran, Morocco, Oman and Syrian Arab Republic). Child restraint wearing rates are only reported in Qatar. The disparity of data on the key risk factors makes it difficult to accurately determine their contribution to road traffic deaths in the Region.

[1] Road traffic injuries, factsheet [website] Geneva: World Health Organization; 2018 (https://www.who.int/news-room/fact-sheets/detail/road-traffic-injuries).

11. Conclusions and recommendations

The WHO Eastern Mediterranean Region has the third highest road traffic death rate in the world. In 2016, more than 120 000 people lost their lives and many more were injured on the Region's roads. The findings from GSRRS 2018 highlight the magnitude of road traffic injuries in the Region and key risk factors. Without increased efforts and new initiatives road traffic injuries will remain a significant public health problem in the Eastern Mediterranean Region.

This factsheet shows that children, adolescents and young adults are disproportionately affected by road traffic crashes and should be the priority for interventions. In addition, car occupants and pedestrians are high-risk groups in the Region. Interventions focused on these groups need to be considered. Motorized two- and three-wheelers are another emerging high-risk group. Preventive measures should be integrated in all related national strategies and action plans within and beyond health, such as those pertaining to child and adolescent health, urban planning, sustainable and safe transport, and so on.

The findings also indicate that more data are needed on the contribution of the five key risk factors (speed, alcohol, and non-use of helmets, seat-belts and child restraints) in the Region. This would assist policy-makers in the design and development of interventions.

Countries need to adopt a systematic view of the road safety problem, recognizing that road traffic injuries are caused by a combination of several interacting factors and that road safety is the shared responsibility of multiple stakeholders. The Safe System approach has been adopted by several countries as a framework to examine road traffic injury risk factors and interventions holistically. The Safe System approach emphasizes a shared responsibility among the people who design, build, manage and use roads and vehicles. It also recognizes that post-crash care is essential to reduce the likelihood of road traffic crashes resulting in serious injury or death. Central to the Safe System approach is acknowledging that human errors are inevitable and, while it is not possible to prevent all crashes, safer roads, safer vehicles and other system factors such as speed management can help to ensure that road traffic crashes do not result in death and serious injury.

In 2017, WHO released *Save LIVES: a road safety technical package,*[1] an evidence-based inventory of priority interventions that provides six strategies on Speed management, Leadership, Infrastructure design and improvement, Vehicle safety standards, Enforcement of traffic laws and post-crash Survival. The six strategies and 22 interventions recommended in the package are interrelated, and should be implemented in an integrated manner to effectively address road traffic deaths and injuries. The following recommendations for countries of the Region draw on the Save LIVES technical package, taking into account the findings of GSRRS 2018 and building on existing efforts in the local context.

[1] Save LIVES: a road safety technical package. Geneva: World Health Organization; 2017 (https://apps.who.int/iris/bitstream/handle/10665/789241511704-/255199/eng.pdf;jsessionid=5D182348E3BA0FE42C1C24EF2BA55464?sequence=1).

Leadership and institutional management

- Establish and/or strengthen a lead agency with the authority and adequate resources to coordinate all road safety activities among multiple stakeholders.
- Develop and/or update multisectoral, data-driven road safety strategies with realistic, time-bound and measurable targets and indicators of road traffic deaths, injuries and risk factors.

Safer roads and sustainable transport

- Invest in safer road infrastructure and design for all road users, with special attention to vulnerable users given that they account for over half of all road traffic deaths in the Region.
- Review existing speed limits to ensure they are appropriate for different road functions and traffic mixes.
- Raise public awareness about the impact of speeding, in combination with appropriate enforcement and penalties for noncompliance.
- Develop policies that promote shifting to safer modes of transport such as walking and cycling as alternatives to car travel, while also taking into consideration the provision of safer spaces for such modes on the road.
- Invest in safe and affordable public transport and encourage its use.

Legislation and enforcement of traffic laws

- Establish/update/enact laws that meet best practice criteria on the five key behavioural risk factors of speed, drink-driving and non-use of motorcycle helmets, seatbelts and child restraints as well as addressing emerging risk factors such as mobile phone use and drug-driving.
- Establish and/or enact appropriate incentives and penalties that ensure compliance with road safety laws.
- Adopt effective enforcement strategies such as automated enforcement which is proven to be a more effective method than manual enforcement in reducing speed. Consider investing in the right tools for the use of new technologies in enforcement. Random breath testing is another recommended and effective enforcement strategy that contributes to reducing and monitoring drink-driving.

Safer vehicles

- Adopt the United Nations vehicle safety standards to protect all road users.
- Establish mechanisms for the periodic assessment of vehicles to ensure that all new and in-use vehicles comply with basic vehicle safety regulations.

- Provide consumer information on vehicle safety through new car assessment programmes that are independent of vehicle manufacturers.

Post-crash care

- Designate a lead government agency with the authority to set system-wide standards and to coordinate pre-hospital and hospital-based emergency care for the injured as well as access to rehabilitation services.
- Develop organized, integrated and timely pre-hospital and facility-based emergency response and care systems by:
  - ensuring 24-hour access to emergency care regardless of ability to pay, and integrating pre-hospital and hospital-based emergency care into national health plans;
  - creating a single universal emergency access call number with centrally coordinated dispatch of ambulances and emergency health workers, and a system of trauma centre designation. The number should be easy to remember, free of charge and ensure nationwide coverage;
  - training and certifying health workers in basic emergency care and strengthening the capacity of all emergency staff, including pre-hospital providers, doctors and nurses;
  - promoting targeted training to key lay groups to ensure that non-medical emergency responders and bystanders can perform simple, life-saving interventions. These could include community leaders, police and professional drivers. This needs to be coupled with the establishment of appropriate bystander protection laws (Good Samaritan laws).

Data

- Adopt the WHO-recommended standard definition of road traffic death (occurring within 30 days of a crash for police data) and road traffic injury classification (by age, sex and type of road user).
- Establish/strengthen data systems including emergency room-based surveillance, CRVS; and trauma registries.
- Include non-fatal injuries and the proportion of road traffic crash victims with permanent disability in reported data. This can be helpful in optimizing post-crash services and in informing large-scale injury prevention strategies.
- Improve data linkages between multiple sectors and data sources, such as police data and health facility records, to improve fatality reporting and compensate for underreporting.
- Improve data collection on intermediate indicators such as speed surveys, helmet/seat-belt observational studies, etc., in order to measure the effectiveness of implementation and enforcement of legislation.

- Conduct research on the economic cost of road traffic crashes, deaths and injuries in order to evaluate the magnitude of the issue. This could help in advocacy for policy-making on the need to address road safety and in the development of targeted road safety interventions.
- Establish policies that ensure effective crash investigation and equitable access to information for survivors and their families.

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