3 Results

3.1 Magnitude of road traffic injuries

Overview

Based on the modelled estimates[1], high-income and middle-income countries of the Eastern Mediterranean Region have the highest road traffic injury fatality rates (per 100 000 population) in the world. With the African Region, the Eastern Mediterranean Region has the unfortunate distinction of the highest overall road traffic injuries fatality rate (of 32 per 100 000 population) in the world (Table 4).

Pakistan contributes to 24% of all deaths in the Region. Consistent with population share, Pakistan, Islamic Republic of Iran and Egypt are responsible for almost 60% of all road traffic injuries deaths in the Region.

High-income countries of the Region have the highest fatality rates from road traffic injuries compared to any other region of the world. The estimated fatality rate of 28.5 per 100 000 population is more than double the next highest, the Region of the Americas, and four times that of the European and Western Pacific regions (Figure 6). Despite having only 3.3% of the world's high-income countries' population and only 1.7% of world high-income countries' vehicles, the Region is responsible for 9.1% of all deaths in high-income countries worldwide. The Eastern Mediterranean Region is the only region where fatality rates are higher in high-income countries than in low-income countries. Three of the five high-income countries with the highest fatality rates are from the Eastern Mediterranean Region (United Arab Emirates, Saudi Arabia and

Table 4. Eastern Mediterranean Region road traffic injury fatality rates (per 100 000 population) compared to global estimates

	High-income		Middle-income		Low-income		Total	
	Eastern Mediterranean Region	Global	Eastern Mediterranean Region	Global	Eastern Mediterranean Region	Global	Eastern Mediterranean Region	Global
Modelled fatality rates	29	10	36	20	28	22	32	19

[1] Modelling was done to adjust for underreporting of data between countries, lack of standard definitions for road traffic deaths, use of different data sources and varying quality of the reporting systems.

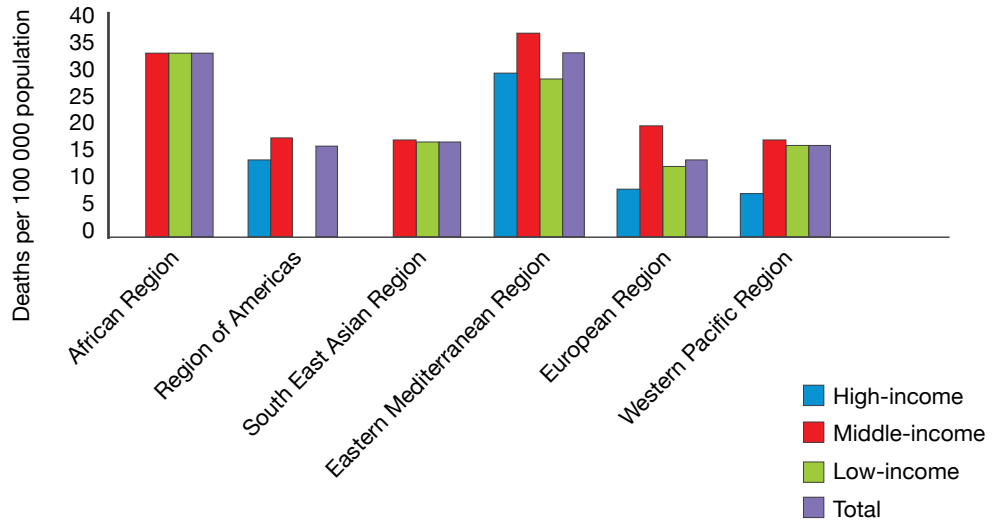

Figure 6. Modelled road traffic injury fatality rates (per 100 000 population) by WHO Region

Qatar). This relationship between income and road safety highlights the rapid and relatively recent increase in income of many countries where rapid infrastructure development has overtaken the growth in safety systems.

The middle-income countries of the Region, with 9.6% of the world's middle-income countries' population, account for 17.6% of global deaths in these countries. The fatality rate of 35.8 per 100 000 population is again the highest in the world. Egypt, a middle-income country, has one of the highest fatality rates in the world (Figure 7).

In the Eastern Mediterranean Region about 80% of road deaths are among males (Figure 8). One possible reason is lower exposure to road risks for females as they tend to drive less compared to men in the Region compared to other regions.

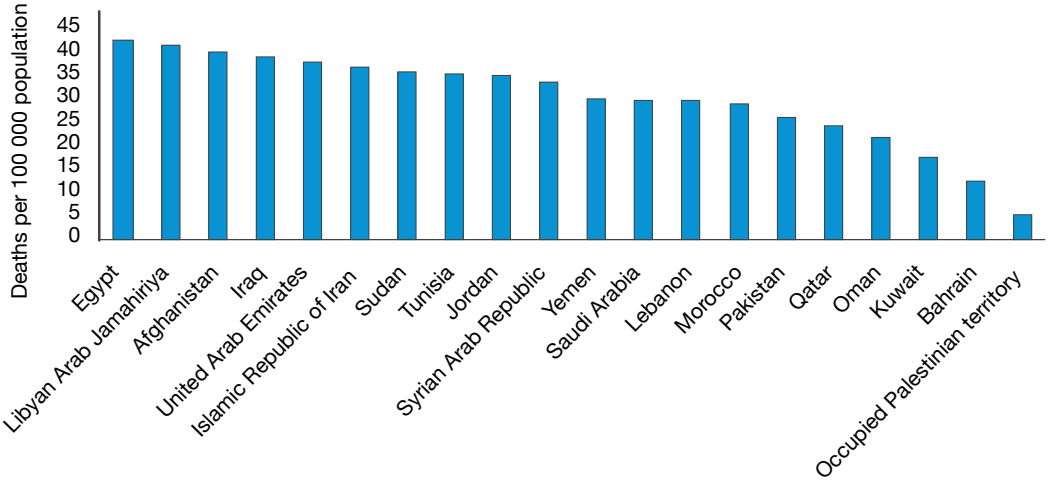

Figure 7. Modelled road traffic injury fatality rates (per 100 000 population) in the Eastern Mediterranean Region

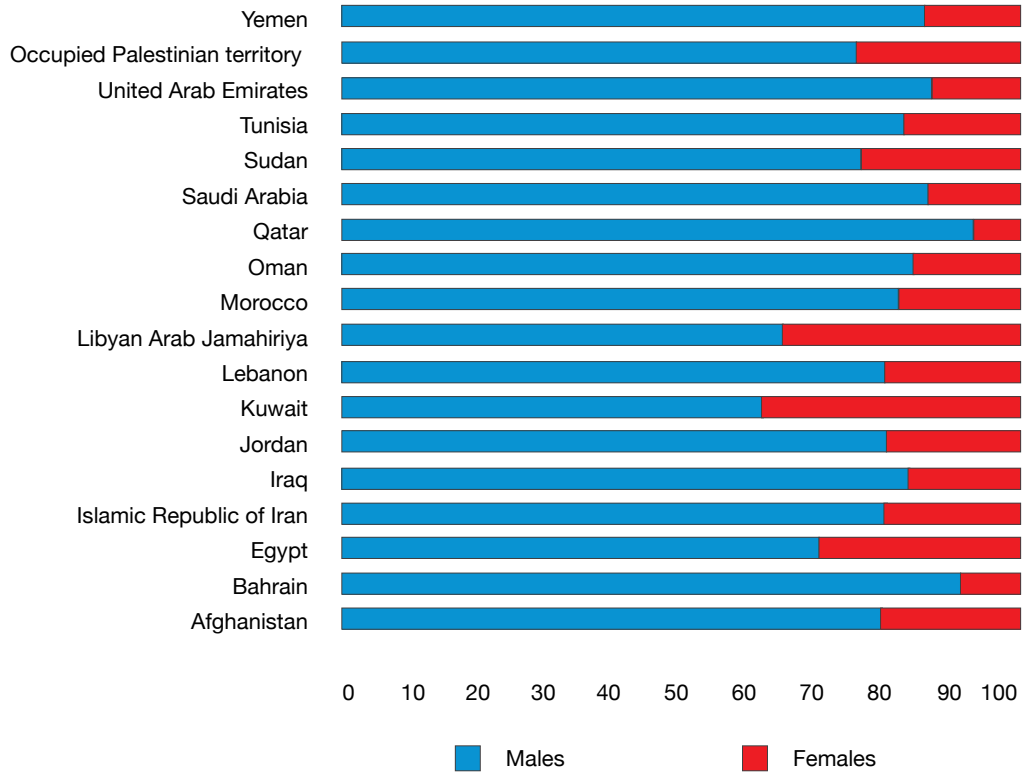

Figure 8. Proportion of road traffic deaths among males and females

Road traffic fatalities by road user groups

What is already known about the issue?

Vulnerable road users (pedestrians, cyclists and users of motorized and non-motorized two- and three-wheelers) constitute 46% of overall global traffic deaths and up to 80% of deaths in certain groups. In many countries the vulnerable road users face risks because of poor planning and construction of roads [15]. Effective interventions such as enforcement of helmet use by cyclists can prevent 60% of head injuries [16].

What does the survey reveal?

Based on data from only 10 countries, 56% of all fatalities were among the occupants of four-wheeled motorized vehicles (Figure 9). This proportion is higher in high-income countries where almost 66% of fatalities are seen in this group. Vulnerable road users account for around 32% of all fatalities with pedestrians, occupants of motorized two- or three-wheelers and cyclists contributing to 22%, 5% and 5% of road traffic deaths respectively (Table 5).

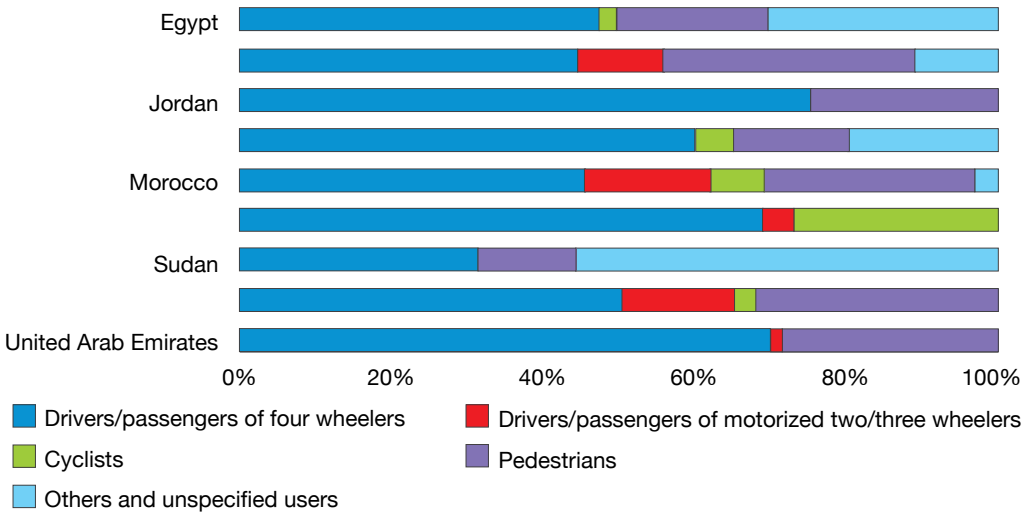

Figure 9. Proportion of modelled deaths by road users (%)

Table 5. Percentage distribution of fatalities by road user type in the Eastern Mediterranean Region*

	All	High-income	Middle-income
Occupants of four-wheeled vehicles	56	66	51
Occupants of motorized two- or three-wheelers	5	4	6
Cyclists	5	11	2
Pedestrian	22	19	24
Other/unspecified	12	0	17

* *No data available for low-income countries.*

The absence of data from low-income countries such as Pakistan, Afghanistan and Yemen needs special mention. These three countries contribute 33% to the total burden of road traffic deaths in the Region.

The distribution of vehicles and thus the exposure vary considerably by the economic status of the country. While motorized two- and three-wheelers constitute almost half of all vehicles in low-income countries, their numbers are less than 1% among high-income countries of the Eastern Mediterranean Region (Table 6). Availability of data from low-income countries is therefore likely to add to the total number of injuries of two- and three-wheelers and pedestrians in the region because of the higher number of small and unprotected vehicles and poor road management in these countries.

Table 6. Percentage distribution of vehicles in the Eastern Mediterranean Region

Vehicle type	Low-income	Middle-income	High-income
Four-wheeled motorized vehicles	31.2	54.4	73.8
Motorized two- and three-wheelers	46.8	22.3	0.8
Minibus/pick up/van/ jeep	12.2	7.5	15.9
Trucks	4.1	8.9	6.3
Buses	5.7	1.4	1.8
Non-motorized vehicles	0.0	0.4	0.0
Other	0.0	5.2	1.5

What action is needed?

Occupants of cars and pedestrians are two high-risk groups in the Region. Interventions focused on these groups such as speed control, use of seatbelts and child restraints, and separating pedestrians from vehicles need to be considered. It is important to collect data from low-income countries in the Region to ascertain the role of motorized two- and three-wheelers in these settings.

3.2 Level of road safety legislation enforcement

Speed control

What is known about this issue?

- High speed is associated with higher risk of crash. For instance a study showed that an average increase in speed of 1 km/h was associated with a 3% higher risk of a crash involving an injury [17].
- The probability of a pedestrian being killed rises by a factor of 8 as the impact speed of the car increases from 30 km/h to 50 km/h [18].
- GSRRS recommended that the speed limits on urban roads should not exceed 50 km/h. It is also important that local authorities further reduce these limits based on local use patterns.

What does the survey reveal?

Only 40% (*n* = 8) of Eastern Mediterranean Region countries had urban speed limits of 50 km/h or less. Four countries (Iraq, Lebanon, Oman and Qatar) reported their urban speed limits higher than 90 km/h.

Speed limits on rural roads[2] in most of the countries of the Region varied from 45 to 90 km/h; in Jordan, Morocco and Oman, this limit is set at above 90 km/h. Only half (11 of 20) of the countries allow modification in the speed limits at the local rather than on national level (Table 7).

Only two of the 21 countries reported perceived effectiveness of overall speed enforcement at 7 or above 7 on a scale of 0 to 10.

Table 7. Countries with urban speed limit of 50 km/h or less

Country/area	Maximum speed	
	On urban roads (km/h)	On rural roads (km/h)
Afghanistan	50	90
Bahrain	50	80
Islamic Republic of Iran	50	60
Kuwait	45	80
Libyan Arab Jamahiriya	50	70
Sudan	50	–
Tunisia	50	50
Occupied Palestinian territory	50	80

[2] Countries may have different definitions for rural roads. However, the United Nations Economic and Social Commission for Asia and the Pacific study defines the connections from villages to markets or to the nearest road of a higher category as rural roads and also those which directly serve farms.

Box 4. Seatbelt use reduces road traffic injuries—evidence from the Region

A study done in United Arab Emirates in 1992 on 706 drivers admitted to the emergency department with road traffic injuries showed that the rate of 10.5% of drivers "always" used seatbelt while 5.8% of drivers used seatbelts "frequently". This retrospective, interview based study showed a reduction in the number of road traffic injuries due to use of seatbelts. Those drivers who were not wearing seatbelts were at risk twice as often as drivers who were restrained by belts. A majority of the patients stated that seatbelts were the best protective measure against all injuries (62.1%) and severe injuries (29.1%) from road traffic accidents. Also, there was strong support for the mandatory use of seatbelts (56%) [22].

What action is needed?

- Member countries should adopt speed limits consistent with known safety standards at the national and local levels taking into consideration the state of the road infrastructure.
- Rapid road infrastructure development in many of the countries of the Region needs to be linked to incorporation of safety features in road design.
- Enforcement of speed limits through the use of speed enforcement detection devices needs to be carried out.
- Local or provincial administrations need to be given the authority, resources and political support to implement measures to reduce speed limits to levels consistent with local safety requirements.
- Legislation and enforcement can be made more effective through targeted public awareness and education campaigns on the adverse effects of speeding and the reasons for enforcing speed limits.

Seatbelts

What is known about this issue?

- Seatbelt use is one of the most effective measures for reducing fatal and nonfatal road traffic injuries [Box 4].
- Seatbelt use reduces crash death risk by 40%–65%, moderate and severe injuries by 43%–65% and all injuries by 40%–50%.
- Wearing a vehicle safety belt reduces the risk of being killed or seriously injured in a road crash by about 40%–50% for front seat and 25%–75% among rear seat passengers [19,20,21].

What does the survey reveal?

All countries of the Region except Afghanistan and Yemen have a national seatbelt law. However, there are only six countries (30%) where the national law on seatbelts applies to all car occupants.

Seatbelt wearing rates were available from 11 countries. For front seat (drivers or passenger) the seatbelt wearing rates vary from 5% in Libyan Arab Jamahiriya to 95% in Oman. There were only two countries with rear passenger seatbelt use rate, with Oman reporting wearing rate of 1% and Morocco reporting 19%. In only one country in the Region did seatbelt wearing rates exceed 90% (Table 8).

The effectiveness of the seatbelt wearing law enforcement is poor in most of the countries of the Region. Half of the countries have law enforcement effectiveness scores of less than 7 on a scale of 0 to 10.

Table 8. Seatbelt wearing rates for drivers and front seat passengers in Eastern Mediterranean Region

Country	National seatbelt wearing rate
Bahrain	22%
Egypt	70% driver only
Islamic Republic of Iran	75%–80%
Jordan	65% drivers; 10% front passenger
Lebanon	15%
Libyan Arab Jamahiriya	5%
Morocco	75% front seats; 19% rear seats
Oman	95% front seats; 1% rear seats
Qatar	50% front seats
Syrian Arab Republic	81% front seats
United Arab Emirates	61% front seats

What action is needed?

- Almost half of road traffic fatalities in the Eastern Mediterranean Region are the occupants of motorized four-wheelers (all four-wheelers as indicated in GSRRS). Mandatory seatbelt use laws for both front and rear seats and strict enforcement could save up to 50% of these fatalities.
- All countries should enact laws that require car occupants to use seatbelts in both front and rear seats.
- Countries should strengthen enforcement of such laws.

Use of child restraints

What is known about this issue?

- Road traffic injuries are the second leading cause of death among children aged 5–14 years of age (Table 9). Children are killed at a rate of 18.3 and 17.4 per 100 000 in high-income countries and low- and middle-income countries of the Region respectively every year. Road traffic injuries bring indirect psychological trauma to children when they are injured or lose a parent to injury.
- Correct use of child restraints can reduce deaths among infants by 70% and small children by 80% [18].

- Unrestrained children were three times more likely to be hospitalized due to road traffic injuries as compared to restrained children [23].
- Enforcement of mandatory child restraint laws can increase the use of child restraints

What does the survey reveal?

According to the survey, only two of the 20 countries surveyed have child restraint laws (Figure 10) compared to about half of countries globally. In these two countries the laws were considered ineffective: in the case of Saudi Arabia the effectiveness was rated less than 3 on a score of 0 to 10 by all the respondents whereas in the case of the occupied Palestinian territory only two of the eight respondents rated it more than 7.

What action is needed?

- All countries should enact laws mandating use of child restraints.
- In countries where such laws exist, better enforcement by police and education of parents will enhance compliance.
- Research is needed in most countries of the Region to establish baseline evidence on the frequency of road traffic injuries among children and the use of restraints, so that the impact of legislation and education can be measured.

Motorcycle helmet use

What is known about the issue?

- Use of helmets is one of the most successful approaches for preventing injury among motorized two-wheeler riders [2].
- Use of helmets when riding a motorcycle can cut the fatality and severe injury rates by almost 40% and 70% respectively [25].
- Effective enforcement of helmet wearing laws can improve helmet wearing rates almost up to 100% [19].
- After the repeal of mandatory helmet

Table 9. Estimated mortality due to road traffic injuries (rate per 100 000 population), age group and income level (both sexes), 2004, Eastern Mediterranean Region

Income level	<1 year	1–4 years	5–9 years	10–14 years	15–19 years	< 20 years
All	27.7	16.3	19.6	11.7	19.8	17.4
High-income	116.6	9.8	9.0	8.8	22.9	18.3
Low- and middle-income	22.6	16.6	20.2	11.9	19.7	17.4

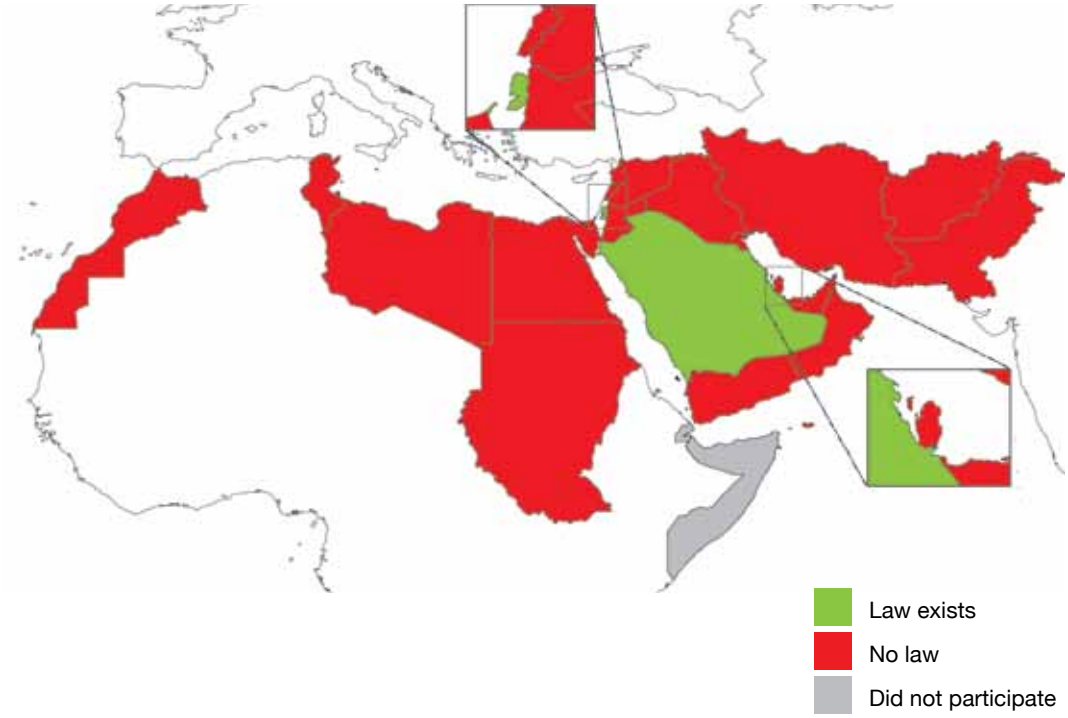

Figure 10. Child restraint laws by country in the Eastern Mediterranean Region

laws, the deaths from motorcycle accidents in two states[3] in the United States of America increased by 50% and 100% respectively [26].

What does the survey reveal?

Results of the survey showed that only four countries out of the 20 surveyed have a mandatory helmet law as well as a helmet standard. Thirteen countries have a law but no standard (Figure 11). Only four countries shared their helmet wearing rates, which ranged from 90% in Qatar to 13% in Islamic Republic of Iran (Table 10). Only the United Arab Emirates rated the effectiveness of its overall enforcement regime above 7.

What action is needed?

- In countries where injuries to motorcyclists are common, laws are needed requiring helmet wearing for both rider and pillion passenger.
- Laws should also define a standard motorcycle helmet, in order to ensure availability and use of the most effective motorcycle helmets.
- In countries with high motorcycle use, helmet wearing rates should be measured as a performance indicator for traffic law enforcement.

[3] Motorcycle helmet laws were repealed in Kentucky and Louisiana.

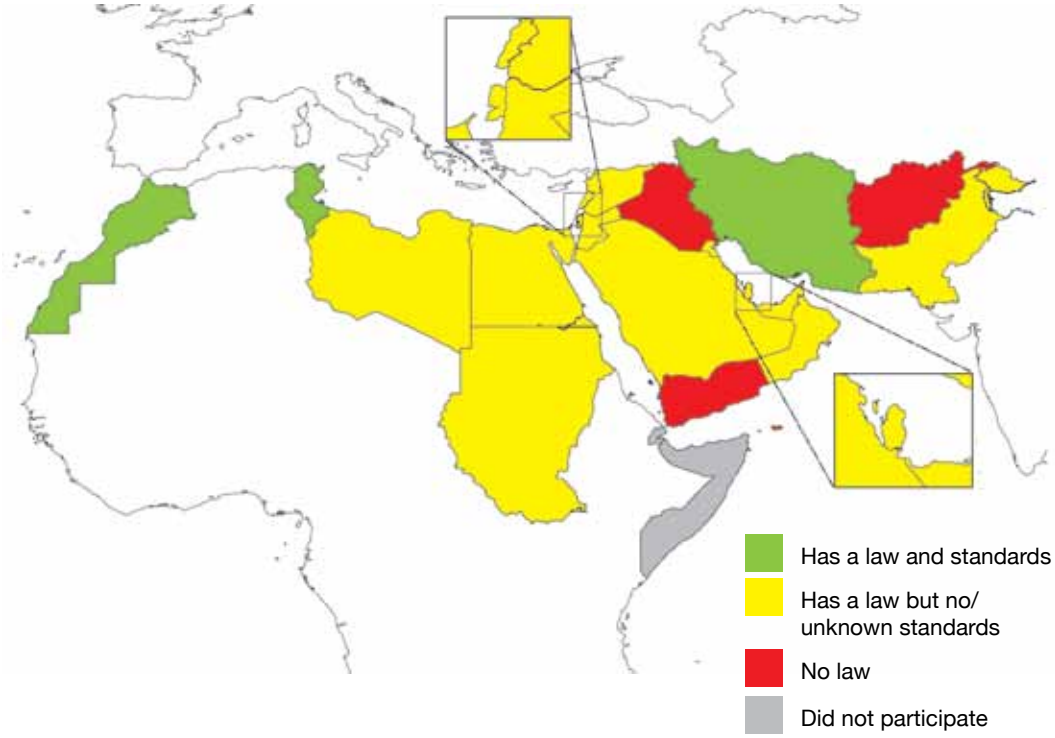

Figure 11. Motorcycle helmet laws and standards by country in the Eastern Mediterranean Region

Table 10. Levels of motorcycle helmet wearing in the Eastern Mediterranean Region

Country	Estimated national helmet wearing rate (%)	National helmet law	Helmet standards
Egypt	70	Yes	No
Islamic Republic of Iran	13–15	Yes	Yes
Morocco	67[a]	Yes	Yes
Qatar	90	Yes	No

[a] *Drivers only*

Alcohol use and road safety in the Eastern Mediterranean Region

What is known about the issue?

- Drivers and motorcyclists with blood alcohol concentration greater than zero are at higher risk of a crash than those whose blood alcohol concentration is zero [27,28].
- The risk of involvement in a fatal crash doubles with each 0.02% increase in blood alcohol concentration [29].
- If a blood alcohol concentration limit is fixed at 0.10 g/dl, this will result in three times the risk of a crash that exists with the most common limit in high-income countries of 0.05 g/dl. If the legal limit stands at 0.08 g/dl, there will still be twice the risk that there would be with a limit of 0.05 g/dl [2].
- Upper limits of 0.05 g/dl for the general driving population and 0.02 g/dl for young drivers and motorcycle riders are generally considered to be the best practice at this time [2].

What does the survey reveal?

The survey found that 19 out the 20 countries surveyed have a law against drinking and driving. Morocco is the only country where such a law does not exist

but alcohol consumption is prohibited. The data showed that nine of the 20 countries of the Region had completely prohibited alcohol use for the general population. Four had a blood alcohol concentration limit of 0.05 g/dl and three had a blood alcohol concentration limit of 0.08 g/dl for the general population (Figure 12). United Arab Emirates is the only country in the Region with a blood alcohol concentration limit of 0.1 g/dl. None of the countries of the Region has defined a lower limit for young or novice drivers as recommended in the *World report on road traffic injury.* Only eight countries reported a system of random breath testing or police check points used for enforcement.

Data on alcohol's role in road traffic injuries were not available for most countries of the Region. Of the 20 countries surveyed, only four provided data on deaths attributable to drink-driving. Bahrain had the highest proportion of road deaths attributed to alcohol (7.7%) followed by Morocco, Libyan Arab Jamahiriya and Tunisia (Table 11). Five out the 20 countries surveyed stated that they considered the enforcement level above 7 on a scale of 0 to 10. Three countries ranked enforcement effectiveness at the level of 1.

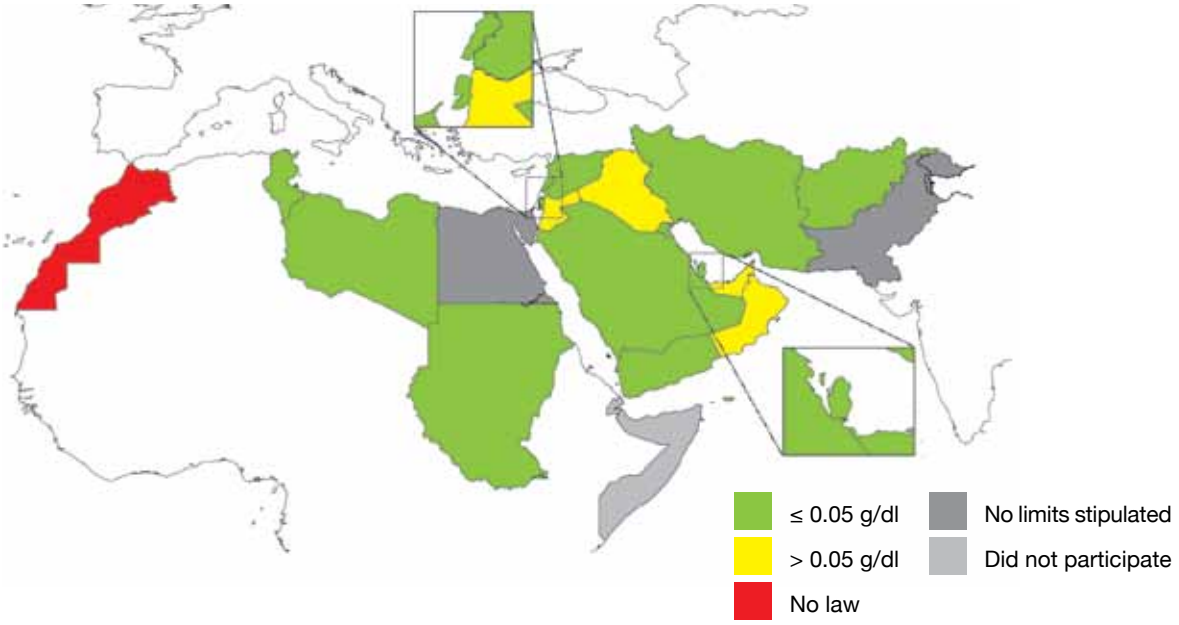

Figure 12. Blood alcohol concentration (g/dl) by country in the Eastern Mediterranean Region

Table 11. Proportion of alcohol-related fatal crashes in the Eastern Mediterranean Region

Country	Fatalities attributable to alcohol (%)
Bahrain	7.7
Morocco	2.97
Libyan Arab Jamahiriya	2
Tunisia	0.7
Afghanistan, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Oman, Pakistan, occupied Palestinian territory, Qatar, Saudi Arabia, Sudan, Syrian Arab Republic, United Arab Emirates, Yemen	No data

What action is needed?

- The system of random checks on drivers and availability of data related to this needs to be strengthened to assess the true contribution of alcohol consumption towards road traffic injuries in the Region.
- Countries permitting alcohol use need to define a lower blood alcohol concentration limit for younger and novice drivers, ideally at the level of 0.02 g/dl or less.
- Behaviour change strategies focusing especially youth to discourage alcohol consumption can reduce the injuries resulting from drunk driving among them.
- More research needs to be carried out on the role of other drugs of abuse such as khat, marijuana, narcotics and benzodiazepines in the incidence of road traffic injuries in the Region.

3.3 Institutions and policies

Institutional framework for road safety in the Eastern Mediterranean Region

Why is an institutional framework important for road safety?

Experience worldwide has shown that the prevention of road traffic injuries cannot be achieved by one single sector, be it transport, police or health. It often requires multidisciplinary, multilevel involvement of governments, businesses and civil society. The effort of coordinating these activities would require a lead agency with an appropriate amount of resources and a clear legislative mandate. Without funding the agency is not likely to be effective. One of the roles of the lead agency or group is to produce a national strategic document for road safety. Countries with a history of success have set of achievable targets to ensure serious consistent efforts.

What are the best practices for an institutional framework?

The first recommendation of the World report on road traffic injury was to "identify a lead agency in government to guide the national road traffic safety effort". The lead agency, with funding and a government mandate, defines a coherent national strategy. A set of targets is then defined to ensure consistent focused interventions [2].

What does the survey reveal?

Fourteen of the 20 countries of the Region identified a lead agency responsible for road safety although only eight of these agencies had funding allocated in the national budget for agency's activities. Of these, seven (50%) had an agency at the interministerial level. Countries without a lead agency included high-income countries such as Kuwait and Qatar, and middle-income countries such as Lebanon, Libyan Arab Jamahiriya, Sudan, Tunisia and the occupied Palestinian territory. All three low-income countries had identified a lead agency.

Only Egypt, Jordan, Lebanon, Morocco, Tunisia and United Arab Emirates had a single national road safety strategy. Nine countries had either subnational plans or multiple road safety strategic plans.

Of those with a national strategy, only half had measureable targets in their strategies (Table 12). Morocco, Tunisia and United Arab Emirates are the only countries in the Region with measurable road safety targets backed by funding to achieve these targets.

What action is needed?

- Countries need to establish lead agencies with funding defined in the national budget and legislative mandate as the primary requirement for further action in road safety.
- Each country needs to develop a national road safety strategy through a national consultative process.
- Each country needs to define measureable indicators and set targets which are formally endorsed by the government and supported by specific budgetary allocations.

Table 12. Road safety institutional framework in the Eastern Mediterranean Region

Lead agency	Number of countries	Percentage of total countries
No	6	30
Yes	14	70
Lead agency is funded (of the 14 countries with a lead agency)		
No	6	43
Yes	8	57
National road safety strategy		
No	5	25
Yes	6	30
Subnational	3	15
Multiple strategies	6	30
Strategy includes measureable national targets (of the six countries with national strategy)		
No	1	17
Yes	3	50
Not formally endorsed	2	33

National policies on alternative transportation

What is already known about this issue?
It is well known that travel by a well regulated public transportation system, such as buses or trains, is safer than any other mode of road travel. According to the *World report on road traffic injury prevention*, countries should encourage the use of public transportation and their combination with cycling and walking [2].

Strategies are needed to: improve mass transit systems and taxi services (including improvements to routes covered and ticketing procedures, shorter distances between stops, and greater comfort and safety of both the vehicle and the waiting areas); better coordinate between different modes of travel; create secure shelters for bicycles and "park and ride" facilities, where users can park their cars near public transport stops; and raise fuel taxes and instigate other pricing reforms that discourage private car use in favour of public transport.

What does the survey reveal?
Eleven out of the 20 countries surveyed in the Region had national policies encouraging investment in public transportation. All of the three low-income countries (Afghanistan, Pakistan and Yemen), some of the middle-income countries (Sudan, Oman, Lebanon and occupied Palestinian territory) and one high-income country (Kuwait) did not have policies that support public transportation development. Libyan Arab Jamahiriya had no national policy, although there were subnational policies. The most common way of supporting public transportation was through subsidizing its pricing and improving access and frequency of public transport service (Table 13).

Only two countries (Islamic Republic of Iran and United Arab Emirates) had policies encouraging walking and cycling. Both of the countries increased investment in bicycle lanes and footpaths as well as instituted traffic calming measures to decrease speed in areas used by cyclists and pedestrians.

Table 13. National policies to support public transport

Country	Subsidized pricing of public transport	Improved service of public transport	Disincentives for private car use
Bahrain	Yes	No	No
Egypt	Yes	Yes	Yes
Iraq	Yes	Yes	Yes
Islamic Republic of Iran	Yes	Yes	Yes
Jordan	No	Yes	No
Morocco	Yes	Yes	No
Qatar	Yes	Yes	No
Saudi Arabia	No	Yes	No
Syrian Arab Republic	Yes	Yes	No
Tunisia	Yes	Yes	No

Note. Libyan Arab Jamahiriya reported subnational policies. Other countries in the Region did not report policies. Yes denotes presence of policy; No denotes no mention of policy.

What action is needed?

- It is critical that countries develop policies to encourage investment in public transport.
- In many countries public transport is run by private transport groups with a focus on profit-making; the additional cost of ensuring safety may not be thought of as good investment. Public transport should be either owned by government or tightly regulated by government to ensure safety.
- Each country in the Region needs to develop policies to encourage walking and/or cycling as an alternative to car travel.
- As about 90% of the countries had no policies for the promotion of walking and cycling and only about half of the countries had national policies for investment in public transport, measures need be taken to provide alternative modes of transport such as walking or cycling which will not only ensure gains in terms of road safety but also help reduce air pollution and improve opportunities for physical activity and exercise, hence reducing the burden of obesity and other chronic illnesses.

Systems to ensure safe roads and safe vehicles

What is already known about the issue?

- Vehicle safety standards—improvements in vehicle design, occupant protection and vehicle maintenance—have reduced road crashes significantly in developed countries.
- Periodic vehicle inspection in addition to frequent random checking of vehicles on the road is practised in many countries.
- Road safety audits should be included during the design, construction and maintenance phases of any new road construction projects.
- Road maintenance includes fixing potholes, cleaning drainage facilities, replacing missing traffic signs, guard-rails, road markings and other safety measures.

What does the survey reveal?

Most of the countries had a standard system of assessment/test for new drivers of cars to undergo in order to obtain a driving licence and almost all of the countries required the drivers to take a theoretical assessment/test (e.g. written exam, computer test) and practical assessment (i.e. in a car).

Eleven countries had a mandatory system that ensured the designs of new major road construction projects be submitted for a road safety audit, and 13 countries reported that the road safety audits (or inspections) of existing road infrastructure were conducted on a regular basis. Most of these audits were performed either by the transport or works department/ministry of these countries.

Thirteen countries did not manufacture vehicles, and there was no national legislation that required the car importers in these countries to adhere to standards of fuel consumption and seatbelt installation in front and rear seats; only three countries had all three standards in place. Periodic vehicle inspection was performed in 16 countries (Table 14).

What action is needed?

- Countries should implement mandatory road safety audits for new road construction projects as well as for existing road infrastructure.
- Countries need to implement a system of periodic vehicle inspection to ensure compliance with the basic safety standards.
- Each country needs to define safety standards for all cars, both locally manufactured and imported. No car should be allowed on the road without seatbelts installed in the front and back seats.

Table 14. Infrastructure and vehicle standards

	Number of countries	Percentage of total countries
Type of test for driving licence (theoretical and practical)		
Both	18	90
Practical only	2	10
Designs of road construction submitted for a formal road safety audit		
Yes	11	55
No	4	20
Informal checks	5	25
Regular road safety audits of existing roads		
Yes	13	65
No	7	35
Periodic vehicle inspection process		
All vehicles	16	80
Except motorized two-wheelers	4	20

3.4 Data quality

What does the survey reveal?

Data are one of the primary drivers of policy. In the Eastern Mediterranean Region, the data on road traffic injuries have three major shortcomings: the underreporting of road fatalities and non-fatal injuries; lack of data on risk factors; and differences in the definition of road traffic injury death, making regional comparison difficult.

All the participating countries reported that they had some mechanism of collecting national data on road traffic deaths on a regular basis. However, when estimates of underreporting were done, the Region was found to have one of the highest levels of underreporting in the world.

Only two countries, Iraq and Pakistan, identified underreporting as an issue during the survey. In Iraq, deaths at the scene of injury were not reported while in Pakistan, the main data source was police reporting and did not include other deaths that occur, for instance, in hospital.

In the case of Afghanistan the deaths reported were from the General Directorate of Road Care, which collects data only from the traffic highways. Hence the data from smaller roadways and data from the hospitals were missing.

Also, data on important risk factors were found to be missing. In particular, data were not available for many countries on seatbelt and helmet use rates and alcohol-related fatal injuries. Data on road traffic deaths by road users were missing in many countries. The standard definition[4] of road mortality is a road death occurring within 30 days of a road crash. Only half of the countries follow this definition. Others have different definitions, as shown in Annex 1.

What action is needed?

- Accurate data collection would require improved data linkages between various stakeholders, increased resources to undertake data collection and processing and involvement of health sector to facilitate road traffic injury surveillance.
- Countries need to use the 30-day definition of road traffic deaths for harmonization across data sources.
- Countries need to establish a system to collect data on rates of seatbelt use, helmet wearing and child restraint use.
- Data need to be gathered on deaths attributable to alcohol.

[4] United Nations Economic Commission for Europe (2003) definition of 30 days to define road fatality.

3.5 Pre-hospital care system

Why is pre-hospital care important in road traffic injuries?

- An effective and efficient chain of interventions is required for timely and appropriate care of trauma patients. This chain of intervention is now called a trauma system.
- Well organized trauma systems have decreased mortality among all treated trauma patients by 15%–20% and decreased medically preventable deaths by 50% [30,31].
- An important component of trauma systems is care before reaching the hospital. There is evidence to support improvement in outcomes through improvements in the pre-hospital care system. For details of development of pre-hospital and trauma care, visit: http://www.who.int/violence_injury_prevention/publications/services/guidelines_traumacare/en/index.html.
- A well established pre-hospital care system means lifesaving and immediate care with the activation of emergency response system through a single well disseminated universal access phone number and lifesaving interventions in the field, provision of efficient and safe transportation to hospital and immediate attention by hospital staff trained in trauma care.

What does the survey reveal?

The survey showed that a formal pre-hospital care system did not exist in three of the countries of the Region surveyed and was present only in certain parts of Pakistan. Most of the countries of the Region have a universal access phone number for pre-hospital care—a single nationwide emergency telephone number. However the effectiveness and reliance of the system is unknown.

What action is needed?

- The pre-hospital care system in each country needs to be integrated into an effective trauma care system at local and regional levels.
- Countries should study the utilization of pre-hospital services and their quality. Quality standards need to be adopted, where they do not exist.