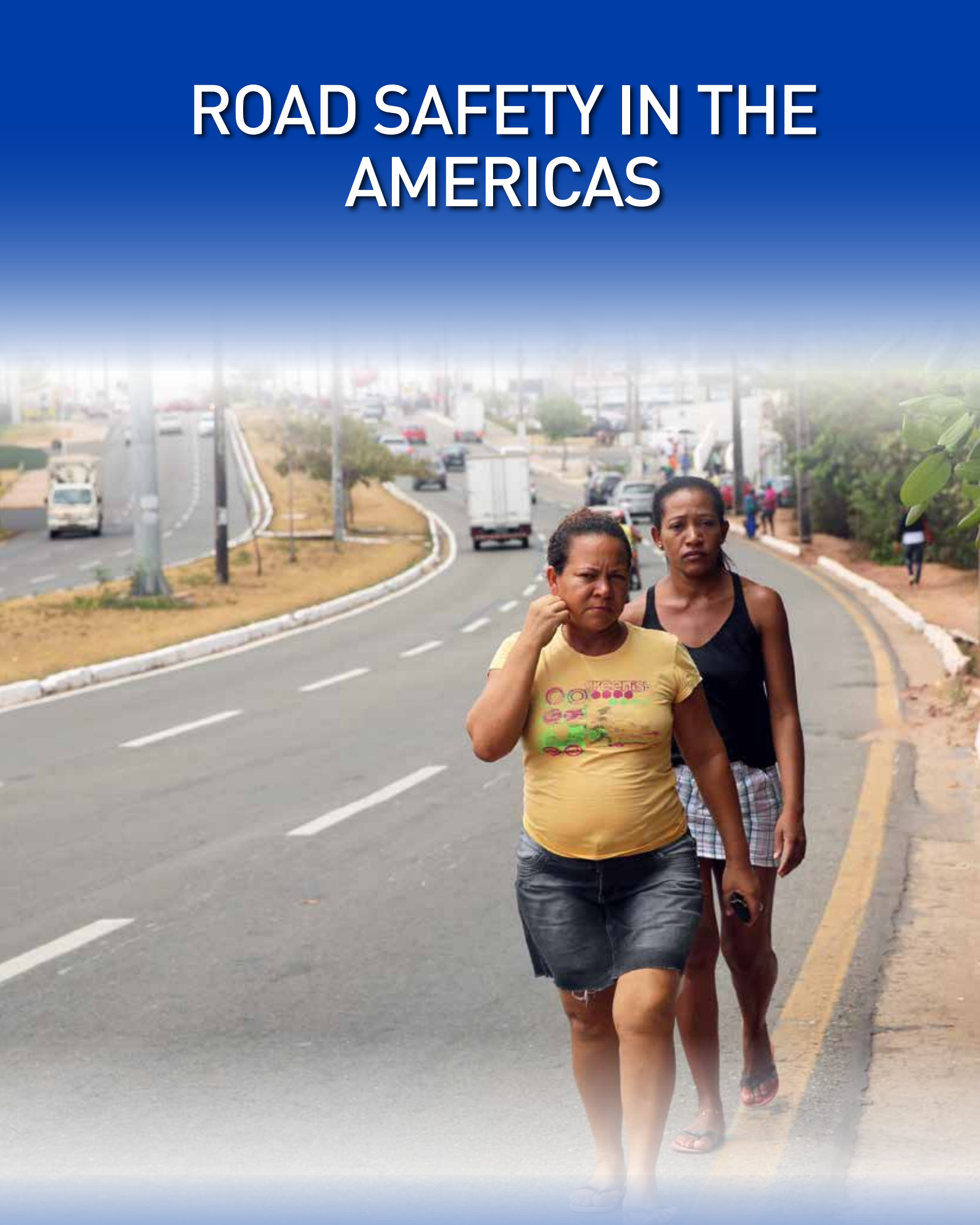
ROAD SAFETY IN THE AMERICAS



Pan American Health Organization

World Health Organization
REGIONAL OFFICE FOR THE Americas

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- Government officials who supported the project and provided official clearance of the information for inclusion in this regional report.

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Road Safety in the Americas: Key Facts

- Road traffic injuries in the Region of the Americas kill some 154,089 people each year, representing 12% of the road traffic deaths worldwide.

- The road traffic death rate for the Region as a whole is 15.9 per 100,000 population, lower than the global rate of 17.4. This regional rate masks wide variations from country to country, however—national rates range from a low of 6.0 in Canada to a high of 29.3 in the Dominican Republic.

- Pedestrians, cyclists, and motorcyclists (considered to be vulnerable road users) make up 45% of road traffic deaths in the Region. Deaths among motorcyclists increased 5% between 2010 (15%) and 2013 (20%), which highlights the need to further protect these road users.

- Legislation is key in the effort to improve road user behavior and decrease road traffic casualties. Most of the Region's countries need to tighten their laws dealing with road-safety risk and protective factors to bring them in line with international best practices.

- Road safety legislation is effective only when coupled with effective enforcement; countries reported a need to better enforce these laws.

- Vehicle standards are an important part of road safety, but only seven of the Region's countries currently apply any of the seven United Nations priority international vehicle safety standards, and not one applies all seven.

- Twelve countries (39%) report having national policies to separate vulnerable road users from high-speed traffic.

- Sixteen countries have policies that promote walking or cycling. Such policies may have additional health benefits, and are aligned with efforts to combat obesity and reduce non-communicable diseases, such as heart disease and diabetes.

- Improving road infrastructure is an effective mechanism for reducing road traffic injuries—23 countries require road safety audits for new roads and 20 regularly assess existing roads.

- Measures such as the availability of a centralized emergency access number can improve post-crash care and help to reduce road traffic deaths and injuries. Currently, 25 of the Region's countries have established an emergency access number.

- Road traffic deaths have slightly increased in the Region. Countries need to accelerate the pace at which they implement effective road safety measures in order to achieve the recently adopted Sustainable Development Goal on road safety—halving the number of global road traffic deaths and injuries by 2020.

MOTORCYCLISTS ACCOUNT FOR 20% OF ROAD TRAFFIC DEATHS IN THE AMERICAS, AND INCREASE OF 5% BETWEEN 2010 AND 2013

Background

Worldwide, road traffic injuries claim more than 1.2 million lives each year and are the leading cause of death among young people aged between 15 and 29 years old. These deaths have a huge impact on health and development, and represent an economic burden in every country. It's estimated that road traffic injuries cost governments approximately 3% of GDP, and up to 5% in low- and middle-income countries.

The rise in global road traffic deaths has been largely driven by the escalating death toll on roads in low- and middle-income countries, particularly in emerging economies. In many middle-income countries, the risk of suffering road traffic injuries depends on various social determinants, such as the use of alcohol while driving, excess speed, traffic flow, and urban and infrastructural developments. Even though the Region's countries have been incorporating and implementing various interventions to reduce road traffic injuries, the pace of change has been slow.

ROAD SAFETY LEGISLATION IS EFFECTIVE ONLY WHEN COUPLED WITH EFFECTIVE ENFORCEMENT

In addition to road deaths, over 50 million people sustain non-fatal injuries each year as a result of road traffic crashes. Road traffic deaths and injuries also can lead to indirect and direct consequences, such as emotional distress and loss of family income; moreover, an increase in obesity due a lack of proper road infrastructure (unsafe spaces for walking or cycling) can help increase the level of obesity in a country.

The Decade of Action and PAHO Plan of Action for Road Safety

In response to the extent and impact of road traffic deaths and non-fatal injuries, in 2010 the UN General Assembly adopted Resolution 64/255, which established the Decade of Action for Road Safety *(1)* as a way to stem and reduce predicted levels of road traffic fatalities at a global level. In 2011, the Pan American Health Organization (PAHO) during its 51st Directing Council meeting adopted the "Plan of Action on Road Safety" *(2)*. The plan, whose objectives were based on the Region's situation and which adheres to the Decade of Action for Road Safety, sets forth guidelines for Member States as they move towards the goal of preventing and controlling road traffic deaths in the Region.

This report functions as a monitoring tool for assessing the situation into the Decade and Plan of Action's third year. As such, it describes the current road safety situation in the Americas; identifies gaps in road safety and stimulates national road safety action; and monitors the countries' progress in implementing measures identified in the Decade of Action and in PAHO's Plan of Action.

Methodology

Each government named a National Data Coordinator (NDC), who was charged with collecting information from his or her country; data were gathered from 31 participating Member States. NDCs also were responsible for identifying up to eight experts on road safety from different sectors (health, police, transport, nongovernmental organizations) and helping to convene a consensus meeting.

These experts were responsible for answering the self-administered questionnaire and for attending the consensus meeting to agree on the data that best described their country's situation. Data were then validated at the national and regional levels and officially cleared by the respective governments. Fatality data, collected through the questionnaires, were reviewed according to a set of criteria that determined how robust they were, and an estimation process was carried out accordingly.

Innovations in this report included a comprehensive collection of legislative documents from participating countries and the gathering of data on vehicle standards from the United Nations Economic Commission for Europe. For more information on the methodology used, please see Explanatory Notes [1] 1 – 3 in the Global Status Report on Road Safety 2015.

This report takes into account data covering 96% of the Region's population. Data on legislation and policies represent the country situation in 2014, and data fatalities and numbers of vehicles are for 2013, the most recent year for which data were available.

Road safety and the Sustainable Development Goals (SDGs)

In September 2015, the United Nations launched the 2030 Agenda for Sustainable Development, which includes the 17 Sustainable Development Goals[2] that supersede the Millennium Development Goals (MDGs). While road safety was not included in the agenda of the MDGs, road safety targets are part of the new 2030 Agenda. The SDG 3 target aims to halve the number of global road traffic deaths and injuries by 2020; SDG 11 aims to provide access to a sustainable transport system for all, expanding public transportation, and improving road safety by 2030.

SUSTAINABLE DEVELOPMENT GOAL 3.6:

By 2020, halve the number of global deaths and injuries from road traffic accidents

[1] For additional information, see http://www.who.int/violence_injury_prevention/road_safety_status/2015/Explanatory_notes_GSRRS2015.pdf?ua=1

[2] For additional information, see http://www.globalgoals.org/.

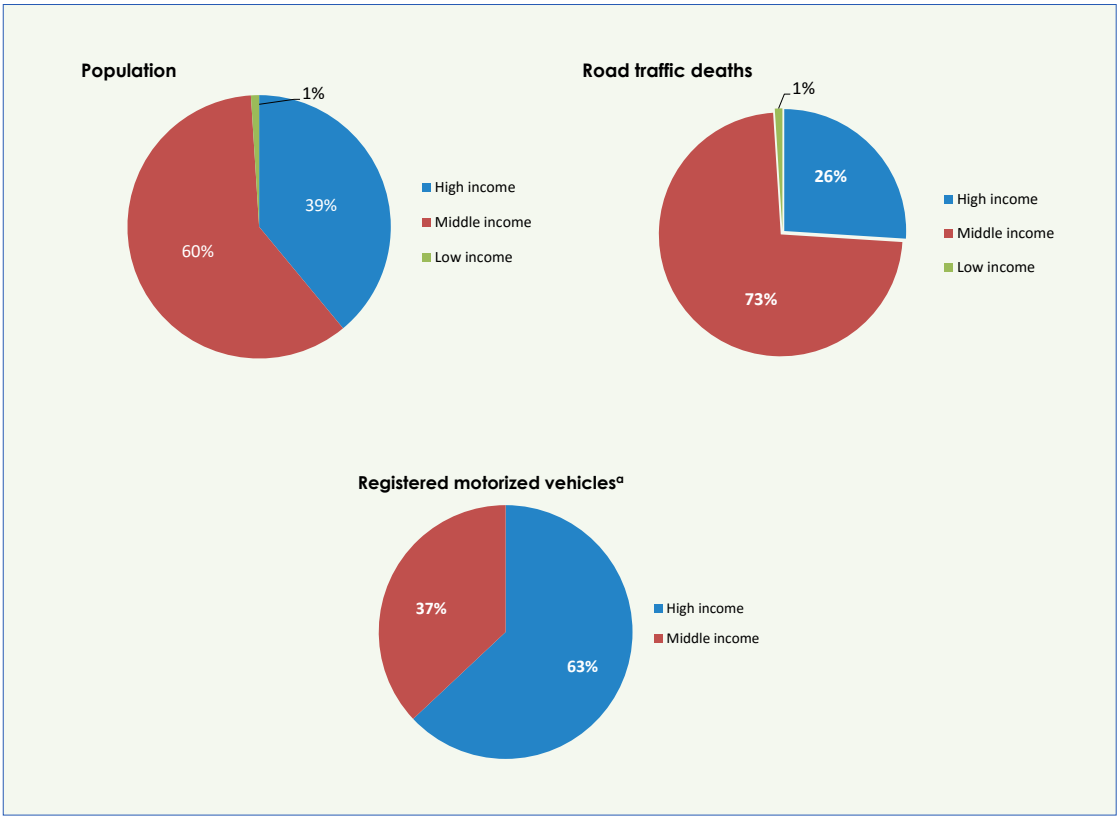
I. Road Safety in the Americas Today

Some 154,089 people died on the road in the Region of the Americas in 2013, about 12% of the world's traffic deaths. This figure represents a 3% increase in road traffic deaths in the Region, rising from 149,357 deaths in 2010.

These average figures for the Americas mask the fact that these deaths are not equally distributed from country to country; moreover, the distribution of deaths is not consistent with income level. The burden of road traffic deaths is higher in middle-income countries (MIC), compared to high-income countries (HIC)—73% of road traffic deaths occur in MIC and 26% in HIC, showing a disproportionately high percentage of deaths relative to their level of motorization (37% and 63%, respectively). See Figure 1.

FIGURE 1.

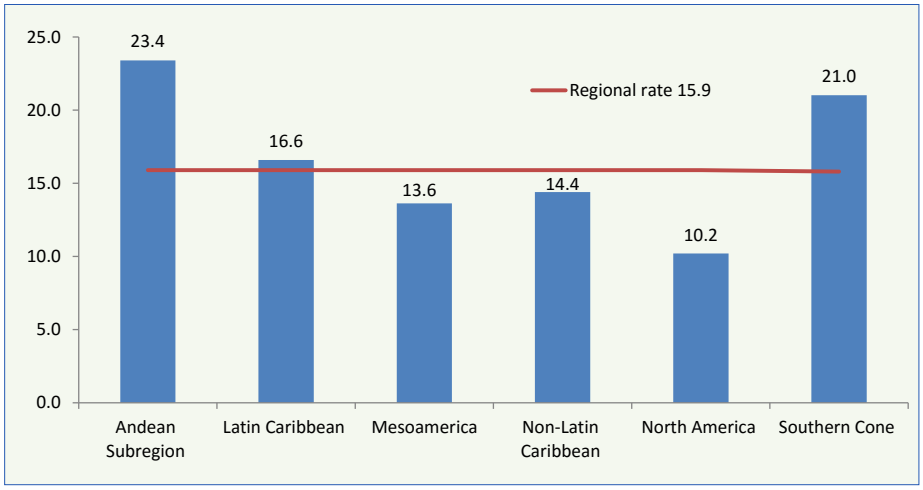
Proportion of population, road traffic deaths, and registered vehicles, by income status, Region of the Americas, 2013.



[a] Data from registered motorized vehicles come only from participating countries.

The road traffic mortality rate for the Region—15.9 per 100,000 population—falls below the global rate of 17.4. That said, the estimated road traffic mortality rates vary from subregion to subregion. For example, the Andean Subregion (rate of 23.4 per 100,000 population) has the highest road traffic death rate in the Region, followed by the Southern Cone and the Latin Caribbean, 21.0 and 16.6, respectively. North America (10.2) has the lowest road traffic death rate in the Region (see Figure 2).

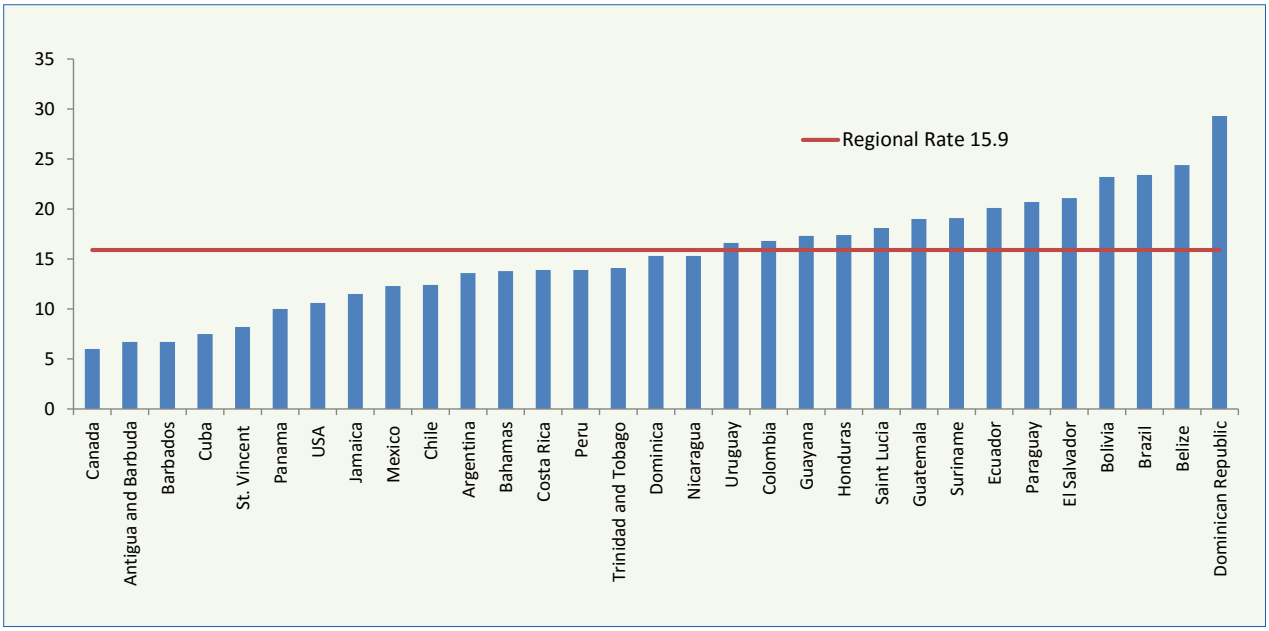
FIGURE 2.
Estimated road traffic deaths per 100,000 population, by subregion, Region of the Americas, 2013.



ROAD TRAFFIC DEATH RATE: HALF OF THE COUNTRIES HAVE HIGHER RATES THAN THE REGIONAL RATE (15.9)

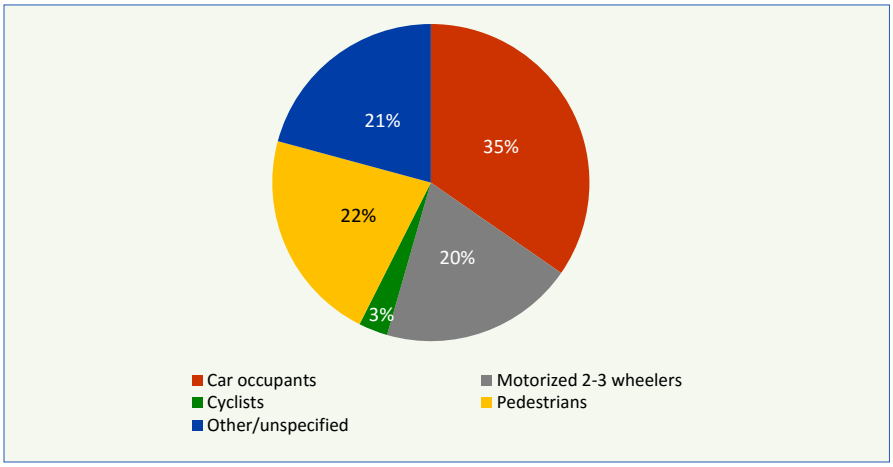
The difference in the mortality rates also is seen at the country level. This alarming reality is shown by the large death rate range among countries, such as Canada (6.0) with the lowest death rate and Dominican Republic (29.3) with the highest rate per 100,000 inhabitants. Almost half of the countries (14) participating in this report have higher road traffic death rate than the Regional rate (See Figure 3).

FIGURE 3:
Estimated road traffic death rates (per 100,000 population), by country, Region of the Americas, 2013.



Vulnerable road users (pedestrians, cyclists, and motorcyclists) make up almost half (45%) of all road traffic deaths in the Region. They are more likely to suffer from severe injuries because of an increase in traffic mix and a lack of traffic separation. In 2013 cyclists, motorcyclists, and pedestrians accounted for 3%, 20%, and 22% of road traffic deaths, respectively (see Figure 4). The Region witnessed a 5% increase in motorcyclist deaths between 2010 (15%) and 2013 (20%); this trend underscores the need to further protect these road users.

FIGURE 4.
Percentage of road traffic deaths, by road user, Region of the Americas, 2013.



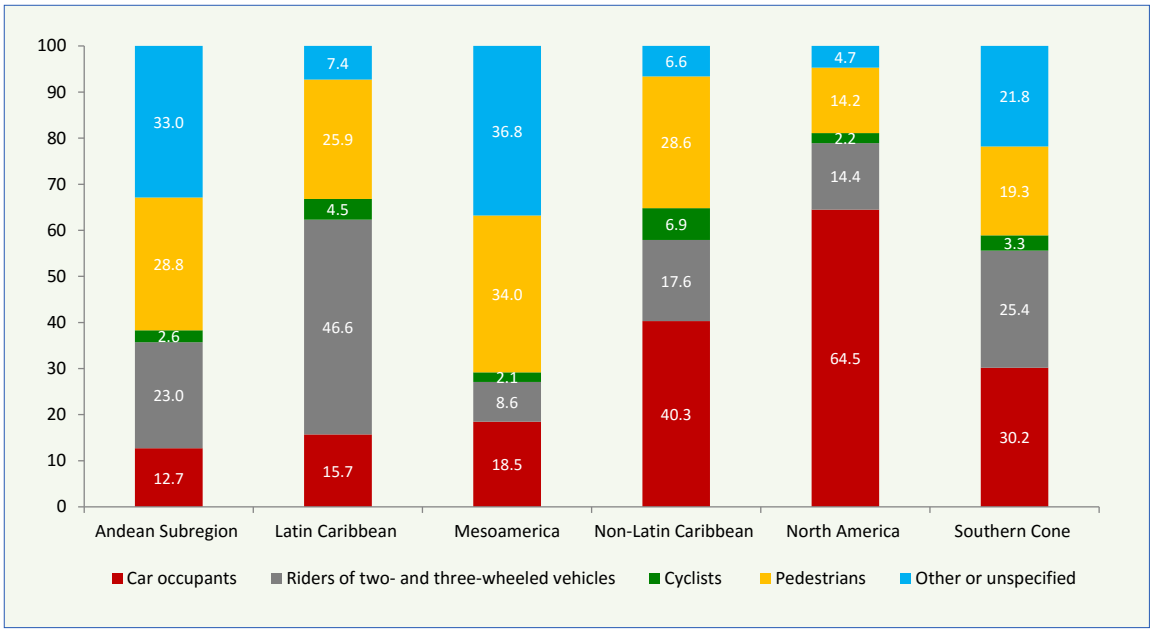
Mortality rates among motorcyclists rose between 1998 and 2010 in every subregion in the Americas. Socioeconomic status plays a key role in motorcycle-related mortality, whereby poorer countries with deep socioeconomic inequalities tend to have higher deaths among motorcyclists *(3)*.



A breakdown of regional data further shows wide differences among vulnerable road users in all subregions, except for North America (where deaths among car occupants are highest). In the Latin Caribbean, 47% of road deaths occur among motorcyclists; other subregions with a high proportion of motorcyclists deaths are the Andean Subregion and the Southern Cone, 23% and 25%, respectively. Among vulnerable road users, the proportion of pedestrian casualties are higher in Mesoamerica (34%), followed by the Andean Subregion (29%) and the Non-Latin Caribbean (28%) (See Figure 5).

Most countries in the Region of the Americas also suffer from underreporting of road traffic deaths and must improve data quality—21% of road traffic deaths are included in the road user category of "other or unspecified." This proportion indicates that many countries must do better to classify road traffic deaths. In looking at information at the subregional level, data also reveal a worrisome proportion of these deaths classified as "other/unspecified," with Mesoamerica (37%) having the highest proportion of deaths thus classified, followed by the Andean Subregion (33%). For more information on country level data, please see Country Profiles[3] in the Global Status Report on Road Safety 2015.

FIGURE 5.
Proportion of reported road traffic deaths, by type of road user and subregion, Region of the Americas, 2013.

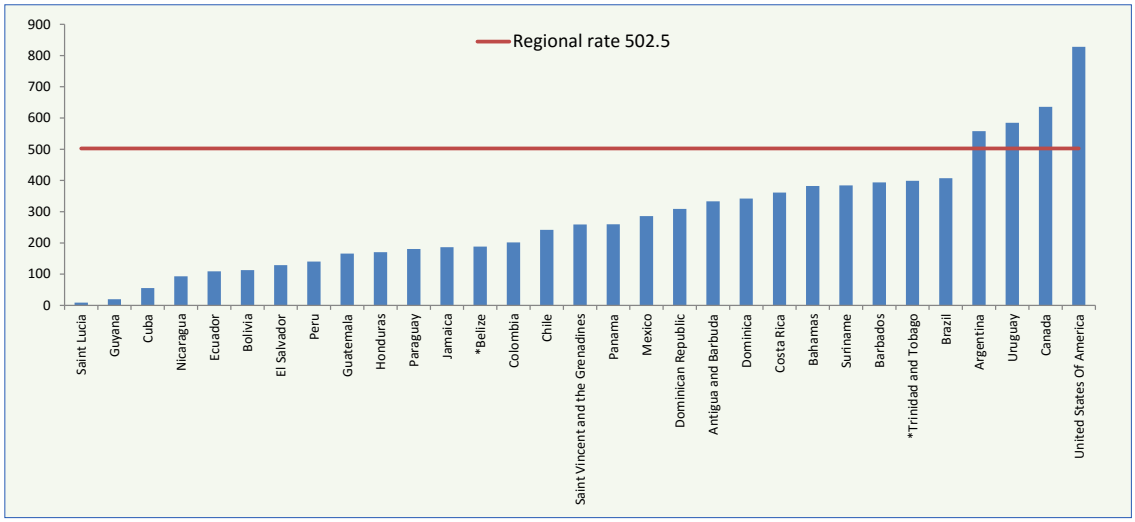


[3] For more information, see: http://www.who.int/violence_injury_prevention/road_safety_status/2015/country_profiles/country_profiles/en/

Rise in motorization in the Americas

The Americas faces a rising trend in motorization, partially due to the economic development seen in many countries. The regional vehicle ownership rate is 502.5 per 1,000 population, which shows an increase in motorization since 2010 (460.08 per 1,000 population). The highest rates were found among high-income countries, including the United States (828.1) and Canada (635.7); the lowest rates were seen in Saint Lucia (8.6) and Guyana (19.6) (see Figure 6).

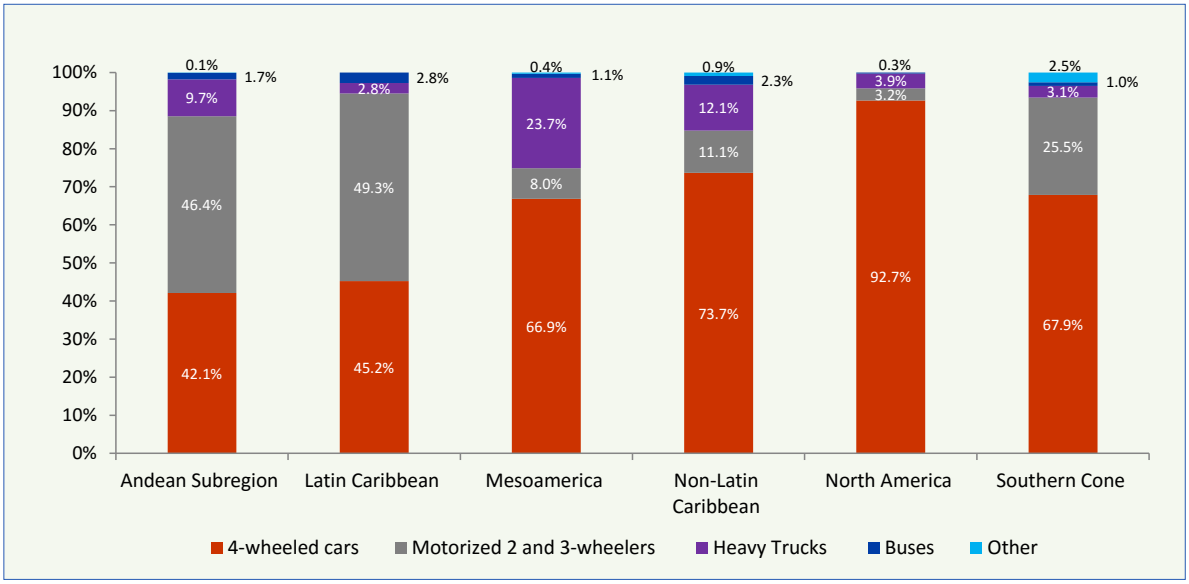
FIGURE 6.
Rates of registered motor vehicles (per 1,000 population), by country, Region of the Americas, 2013.



**Note:* Data for Belize and Trinidad and Tobago are derived from *(4)*.

Rates of vehicle ownership and type of vehicle owned vary among subregions. On the one hand, four-wheeled cars in the North American subregion, which includes United States and Canada (two high-income countries in the region), comprise more than half of registered vehicles. On the other, motorized two- and three-wheeled vehicles are the most common motorized vehicle in Latin Caribbean (49%), and the Andean Subregion (46%) (See Figure 7).

FIGURE 7.
Proportion of registered vehicles, by vehicle type and subregion, Region of the Americas, 2013.



Need for harmonization of data on road traffic deaths

Road traffic mortality data is used to monitor and evaluate national plans and programs, to compare road traffic deaths with other causes of deaths, and to conduct country-to-country comparisons. Vital registration data is used to estimate the extent of road traffic casualties by using information on a victim's sex, age, and geographic area.

If countries cannot provide vital registration data, police reports can be used as a source. As of this writing, only 4 of the Region's countries reported having data from vital registration, compared to 15 countries that provided data from police databases; 6 countries also provide data from a combined source. Furthermore, the use of a standard definition for a road traffic death[4] is essential to accurately describe road traffic injury: 10 countries now use the PAHO/WHO recommended definition, which marks progress since 2007, when only 8 countries applied this definition.

Providing care to the injured

Most countries, especially high-income countries, are able to provide adequate and quick emergency and medical care to those severely injured. Mechanisms that facilitate a prompt emergency response include the integration of a universal centralized access number and access to well-equipped ambulances and health facilities. In the Region, 25 countries have access to a single emergency number, while 6 rely on multiple numbers.

The accessibility and quality of these services, which plays a key role in the prompt assessment of the injured and the delivery of care to them, varies from country to country. Those countries that offer accredited trauma care courses for doctors and nurses can effectively improve the quality of care provided to road traffic victims; as of this writing, 25 of the Region's countries offer some type of emergency specialty for doctors, and 20 countries have such programs for nurses.



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[4] PAHO/WHO recommends that the definition of "death occurring within 30 days of the road traffic crash" be used.

II. Road Safety Legislation in the Region

The implementation and full enforcement of legislation have proven to be effective in changing road-user culture and behavior to reduce road traffic casualties. This review shows the status of the countries' current legislation dealing with risk factors (speed and alcohol) and protective factors (use of helmets, seat belts, and child restraints).

Box 1. Criteria used to define legislation dealing with risk factors and protective factors in line with best practices

Drink-driving: National drink-driving law based on a blood alcohol concentration (BAC) of equal or less than 0.05 g/dl for the general population and a BAC of 0.02 g/dl for novice and young drivers.

Speed: National speed limit with a maximum urban speed limit of 50 km/h, with local authorities allowed to reduce speed limits.

Motorcycle helmets: National law on motorcycle-helmet use that applies to all drivers and passengers, on all roads and all engine types; the law also requires the helmet to be fastened and requires helmet to adhere to national/international standards.

Seat belts: National law on seat-belt use that applies to all car occupants (front and rear seats).

Child restraints: National law on the use of child restraints based on age, height and/or weight, and reference to the existence law that restrict children under certain age from sitting in the front seat.



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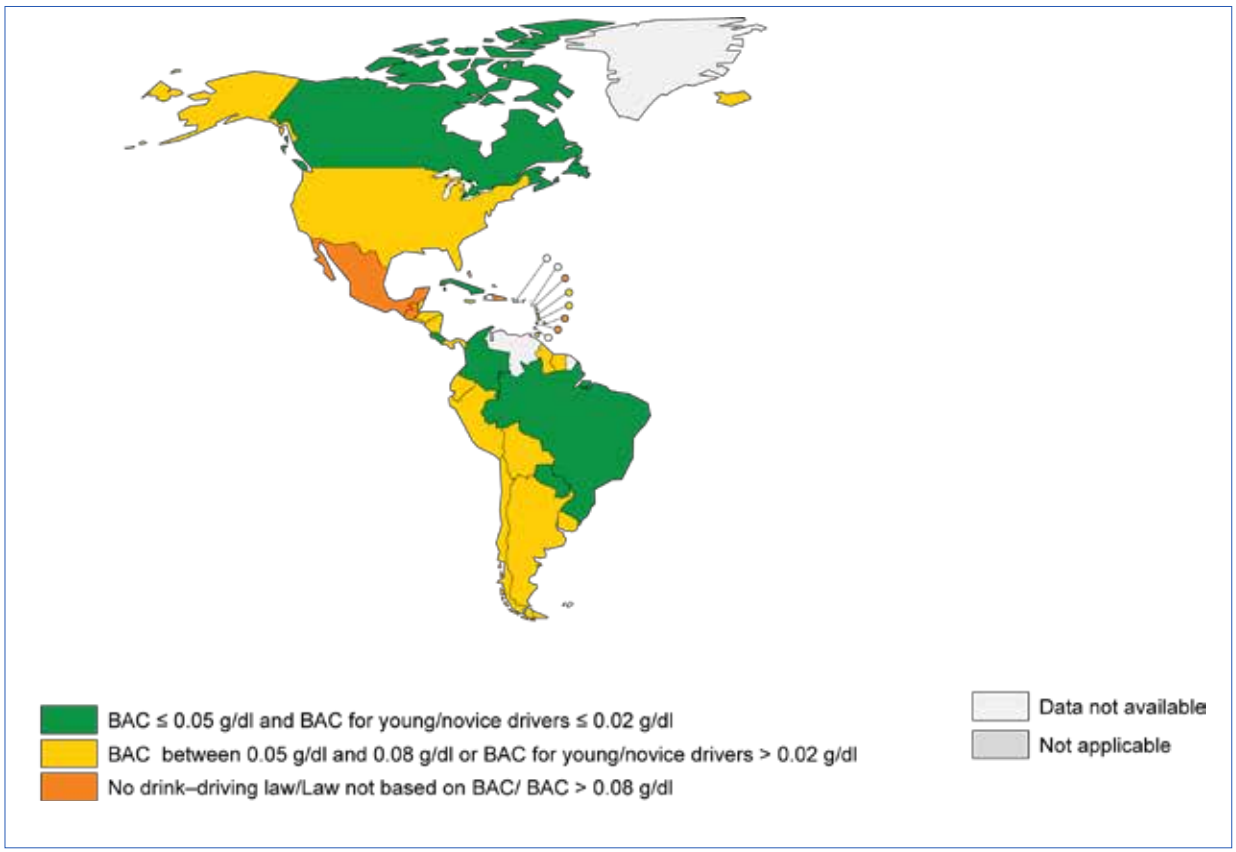
DRINK-DRIVING

High levels of blood alcohol concentration (BAC) (≥0.05 g/dl) increase the probability of road traffic crashes. Drink-driving is also associated with other high-risk behaviors, such as speeding and not using seat belts. Young or novice drivers are also at higher risk of a crash when driving under the influence of alcohol than are older or more experienced drivers. BAC limits lower than 0.02 g/dl can reduce the number of crashes involving young people by as much as 24% *(5, 6)*.

Only six of the Region's countries meet WHO's criteria for best practices (BAC limit ≤0.05 g/dl for general population and ≤0.02 g/dl for young/novice drivers) (see Figure 8). Legislation dealing with drink driving also should be strictly enforced to achieve its full potential and be effective. Only four of the participating countries rated their drink-driving law enforcement as "good" (8 or better on a scale of 0 to 10).

FIGURE 8.

Drink-driving laws, by country, Region of the America, 2013.



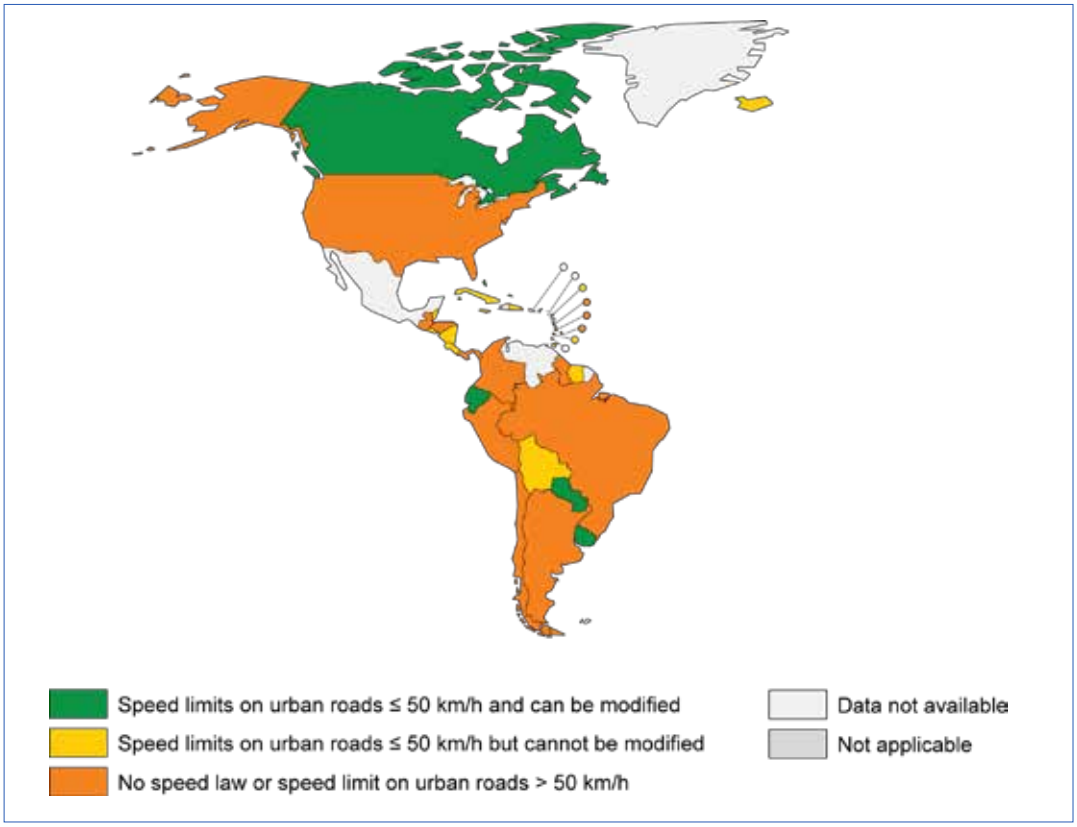
SPEED LIMITS

Exposure to different traffic mixes, especially those involving high speed, increases the likelihood of a road traffic crash. If a crash occurs, pedestrians, cyclists, and motorcyclists have a higher risk of dying or sustaining severe injuries. Given the high speeds and a traffic mix that includes vulnerable road users seen in urban areas, speed limits there should not exceed 50 km/h. Seventeen of the Region's countries have set maximum urban speed limits equal to or under 50 km/h, which is in line with best practices. Speed laws should be paired with strong enforcement in order to make them effective and to save lives. Unfortunately only one country rated its enforcement of speed laws as "good" (8 or above on a scale of 0 to 10).

The second criterion for dealing with speed involves the engagement of local authorities to reduce national speed limits and manage speed at the local level. The analysis of legislation indicates that 13 countries allow local authorities to reduce national speed limits.

There 5 countries in the region meet both legislative criteria for best practice on urban speed management – a national urban speed limit of 50 km/h, and local authorities are allow to reduce this limit (see Figure 9)

FIGURE 9.
Urban speed laws by country, Region of the Americas, 2013.

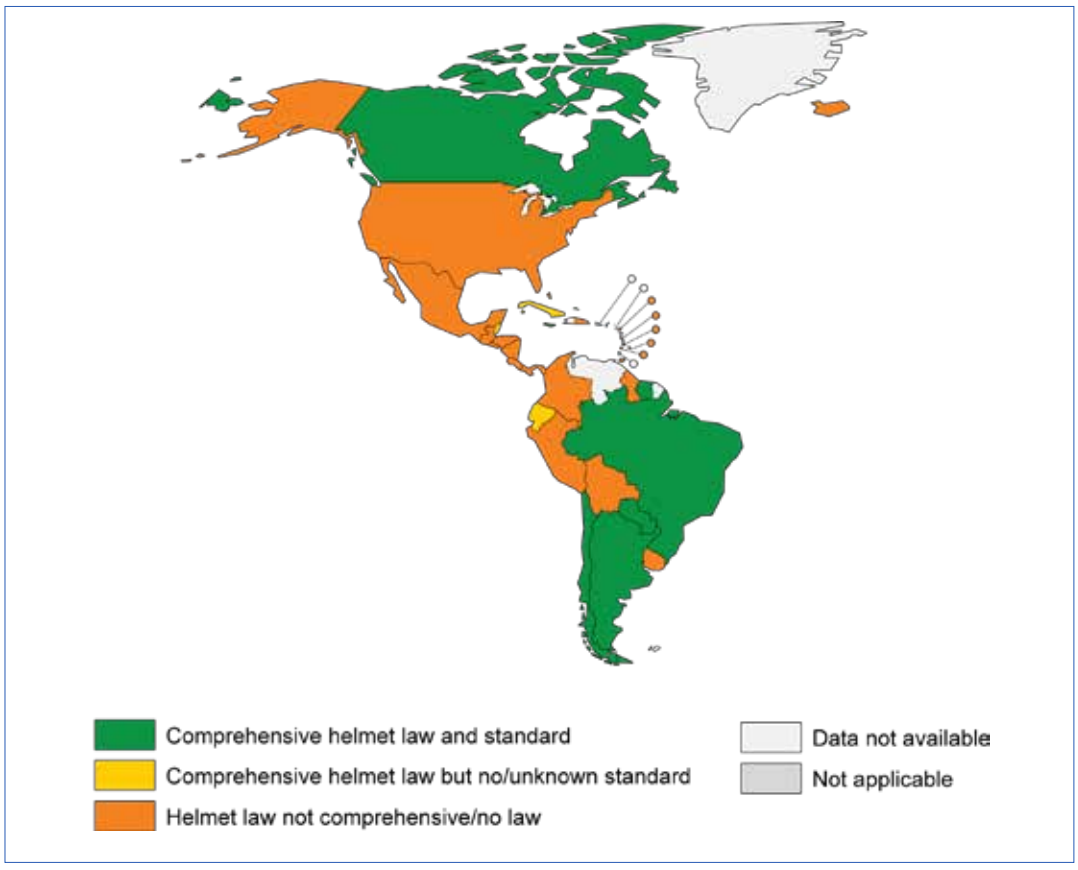


HELMET USE

Motorcyclists share traffic space with fast moving cars, are unprotected, and are less visible. These factors make motorcyclists more likely to die as a result of head injury. Wearing a motorcycle helmet reduces the risk of dying by almost 40% and reduces severe injury by approximately 70% *(7)*. The effective enforcement of helmet use can increase helmet wearing rates, thus reducing head injuries. To fully protect motorcyclists, helmet legislations should incorporate national or international standards to ensure the protective quality of helmets.

Only 10 countries in the Americas have a national helmet law that applies to all drivers and passengers, all road types and all engine types, and requires the helmet to be properly fastened, in line with best practices. In terms of helmet safety, 16 countries have laws that require that helmets meet national or international standards, but only 7 meet both criteria (having helmet laws that meet best practices and applying helmet standards (see Figure 10). Only 11 countries rated their enforcement as good.

FIGURE 10.
Motorcycle helmet laws, by country, Region of the Americas, 2013.



SEAT-BELT USE

Seat belts reduce the movement of vehicle occupants in the event of a crash, preventing the likelihood of serious or fatal injuries. Wearing a seat belt reduces the risk of fatal injury among drivers and front-seat passengers by 45% to 50%, and up to 25% among rear-seat occupants. Strong enforcement of this type of legislation is an effective mechanism for increasing seat-belt wearing rates *(8)*.

While 29 countries have some type of national seat-belt law in the books, some of these laws may only apply to front passengers, or the law might not apply outside cities. The legislation analysis shows that 19 countries follow best practices—seat-belt laws that apply to both front and rear seat passengers and are in effect at all times (see Figure 11). As for law enforcement, only 10 countries rated their enforcement as "good."

FIGURE 11.
Seat-belt laws, by country, Region of the Americas, 2013.

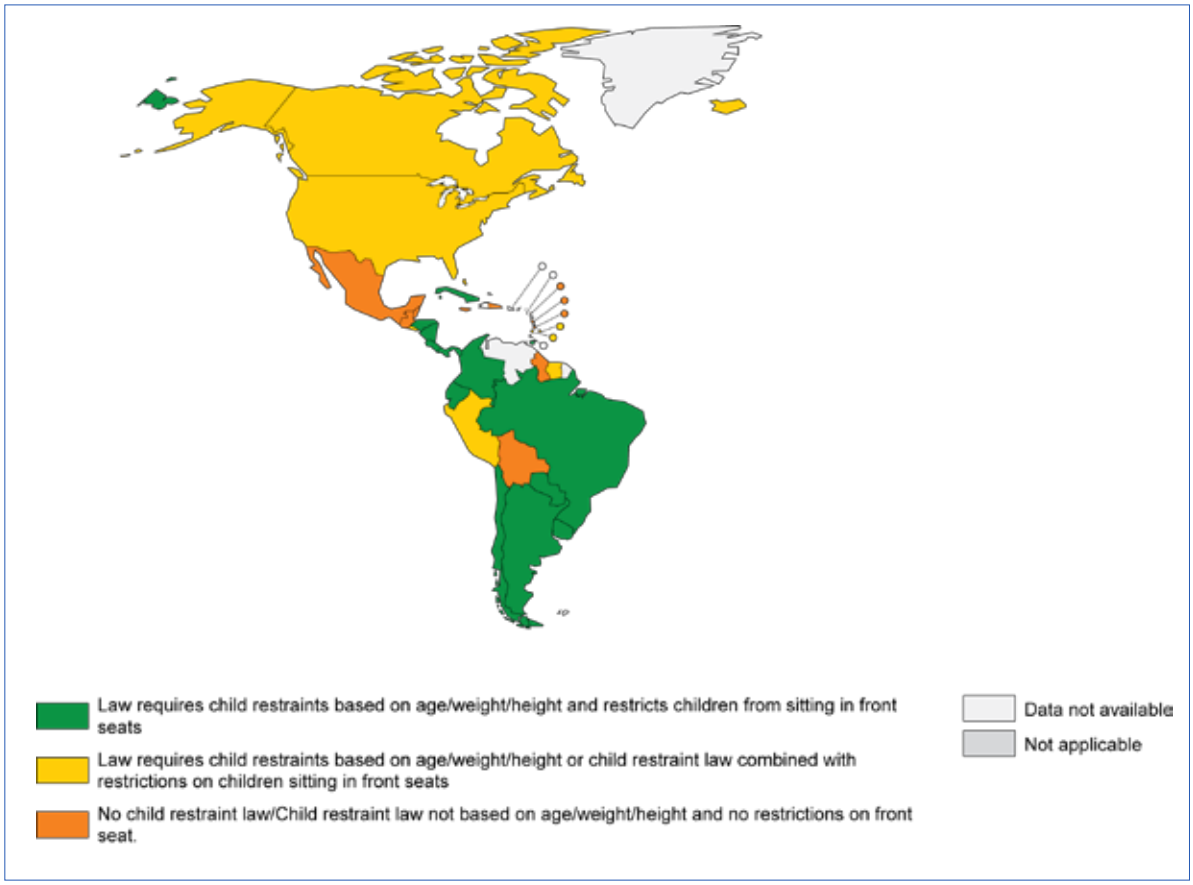


CHILD RESTRAINTS

Because seat belts are not designed to be used by children and do not offer them the protection they give to adults, child restraints are needed to protect young passengers from serious or fatal road traffic crashes. The effectiveness of these devices depends upon the type of restraint used and its position in the car. Rear-facing restraints for babies and infants can reduce death or injury by up to 90%, compared to having a child ride without any restraint or using a forward-facing child restraint, which only reduces the risk of serious injury by approximately 80% *(9)*. Booster seats, generally used by children 4–10 years old, reduce the risk of injury by almost 70% *(7)*. Children also are safer sitting in the rear, rather than in the front seat *(6, 7)*.

Thirteen countries have child-restraint legislation that meets best practices: these laws restrict children under a certain age from sitting in the front, and the law must be based on age, weight, and/or height (see Figure 12). Unfortunately, enforcement of these laws is weak across the Region, with only two countries rating their enforcement as "good."

FIGURE 12.
Child restraint laws, by country, Region of the Americas, 2013.



III. Road Safety Policies to Protect Road Users

Vehicle-safety standards

As motorization increases in the Region, the countries are faced with the need to incorporate safe vehicle standards in order to prevent and reduce serious consequences following a crash. At the international level, the United Nations World Forum for Harmonization of Vehicle Registration is the global entity responsible for the development of passenger car safety standards. This body's regulations provide a legal framework for a range of vehicle standards. This review examines seven basic, high-priority international standards that each Member State applies voluntarily. None of the participating countries in the Americas meet all seven, but seven countries meet at least one, three of them being high-income countries.

Improving the road infrastructure

Road infrastructure has traditionally maximized mobility and economic efficiency at the expense of safety, particularly for non-motorized road users. As motorization increases worldwide, walking and cycling have become less common and more dangerous. The traffic mix in many countries make pedestrians and cyclists share the road with high-speed vehicles, forcing them to negotiate dangerous situations and fast-moving traffic.



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Measures to promote walking and cycling are also in line with other global moves to fight obesity, reduce noncommunicable diseases (such as heart disease and diabetes), and improve the quality of urban life. These changes are more pertinent than ever for low- and middle-income countries. This report found that 16 countries have policies in place that promote walking or cycling, although frequently these strategies are not combined with other measures, such as speed management.

Sustainable urban designs allow cities to be interconnected, reduce the need to drive, and prioritize the ability of vulnerable road users—pedestrians, cyclists, and motorcyclists—to coexist with cars. Road separation in a traffic system promotes the safety of pedestrians and cyclists by eliminating conflicts between high-speed vehicles and vulnerable road users. Twelve countries in the Region have policies in place that promote the development of separate lanes for vulnerable road users.

Improving road infrastructure is a key for making roads safer. Placing citizens at the center of road development and/or road enhancement can improve mobility and reduce the risk of road traffic death and injury. Safety standards and safety design audits should be used to identify design modifications that may be needed to increase safety. In terms of design audits, 23 countries rely on some type of road safety audits for new road construction, and 20 regularly inspect existing road safety networks.



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Conclusions and Recommendations

- This report highlights several areas where progress should be made. Promulgating and enforcing laws that deal with key risk factors and that are based on best practices are essential ingredients in achieving such change. Most countries confront various legislative issues that should be improved; moreover, the enforcement of these pertinent laws must improve.

- Many of the Region's countries suffer from under-reporting issues—21% of all road traffic deaths are registered as "other or unspecified." Under-reporting hinders the development of interventions targeted to specific road users and undermines the assessment or their implementation. Member States should improve data quality and surveillance systems to identify priority areas, set targets, and monitor and evaluate the implementation of strategies.

- Countries should do more to ensure that their road infrastructure is safe for all road users. Road safety audits should be conducted on both new and existing roads, and the safety of vulnerable road users through the incorporation of road separation should be assessed. Countries should ensure that there are available spaces for pedestrians and bicyclists that promote walking and cycling, which enhances the co-existence with other road users. Safe and sustainable mobility will also promote physical activity, thus improving overall welfare and helping to reduce obesity and noncommunicable diseases.

- It is very important to understand the critical role that post-crash care can have in mitigating the consequences of road traffic crashes. Interventions such as the establishment of a single emergency number and the development and strengthening of accredited trauma care programs for doctors and nurses can improve access to care. These measures can also increase the quality of care administered at health facilities and can have a major impact on outcomes.

- For the past three years, the Region of the Americas has faced a slight increase in the number of road traffic deaths. Country governments should harness political will and engage in rapid action in order to meet the Sustainable Development Goal 3.6—to halve road traffic deaths by 2020.

ROAD TRAFFIC INJURIES WERE RESPONSIBLE FOR 154,089 DEATHS IN THE AMERICAS IN 2013.

These deaths account for 12% of the road traffic deaths worldwide.

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