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Protecting Young Lives

Global Status Report on Child and Adolescent Road Safety

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Foreword

It is every child's right to have access to safe, sustainable mobility – a safe journey to school, home, family and friends.

Yet, road traffic crashes are the leading cause of death for children and adolescents aged 5 to 19 worldwide. Each year, more than 180,000 young people under 19 lose their lives in road crashes. That is 500 lives lost every day or one every three minutes.

Over 90 per cent of these deaths occurring in low- and middle-income countries, where the fatality rate is three times higher than in high-income nations. These deaths and injuries are preventable.

This report highlights key road safety challenges for children and adolescents by analysing the global burden, identifying policy gaps and presenting evidence-based solutions designed for children and adolescents.

Strong government action, supported by the private sector, academia, civil society and youth, can save lives and create safer environments. Safer mobility for children and young people not only prevents harm but also reduces harassment on public transport, encourages physical activity and active travel, and fosters independence, well-being and development. The broader benefits include lower healthcare costs from fewer road injuries, reduced traffic congestion, cleaner air and less noise pollution, improved public health, and safer, more inclusive communities that support economic growth. Road safety is not only a transport challenge. It is also a children's rights issue, linked to health and survival, education, protection and participation rights and a global development challenge with strong impacts on health, well-being and economic growth. By addressing child and adolescent road traffic injuries, we can increase co-benefits with other key public health, climate, transport and economic initiatives.

The World Bank estimates that countries that fail to invest in road safety lose between 7 per cent and 22 per cent of their potential per capita GDP growth. On average, a 10 per cent reduction in road traffic injury deaths increases per capita real GDP by 3.6 per cent. Change is possible. Strong commitments to creating safe and healthy communities, including safer roads, are needed now. These efforts are essential to achieving the targets of the Sustainable Development Goals and the Global Plan for the UN Decade of Action for Road Safety, which aims to reduce road deaths and injuries by at least 50 per cent between 2021 and 2030.

Effective road safety interventions must be adopted, implemented and enforced at local, regional and national levels. When proven measures are put into action, lives are saved.

UNICEF is committed to ensuring that every child survives and thrives in a safe and healthy environment. Reducing road traffic injuries, fatalities, and their environmental impact on children and adolescents is essential to achieving this goal.

George Laryea-Adjei

Director Programme Group, UNICEF

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Acronyms and abbreviations

BAC	blood alcohol concentration
DALYs	disability-adjusted life years
iRAP	International Road Assessment Programme
LMICs	low- and middle-income countries
NGOs	non-governmental organizations
NRSC	National Road Safety Council
SDGs	Sustainable Development Goals
UN	United Nations
WHO	World Health Organization
YOURS	Youth for Road Safety

Executive summary

Protecting Young Lives: Global Status Report on Child and Adolescent Road Safety highlights the critical issue of road traffic crashes as a leading cause of death and injury among children and adolescents worldwide. Annually, an estimated 181,453 children aged 0–19 years die from road traffic injuries, with more than 90 per cent of the burden affecting low- and middle-income countries (LMICs). These injuries result in immense suffering and impose a substantial societal cost on affected communities, limiting the educational and economic potential of young people. This report presents the status of child and adolescent injuries using the latest available data from 2021, underscores the unique vulnerabilities of young road users, identifies policy gaps, and presents evidence-based solutions.

This report aims to:

1. **Assess the global status of child and adolescent road safety,** providing an overview of the child and adolescent road injury burden and identifying gaps in actions needed to advance road safety.
2. **Highlight risk factors** that make young road users particularly susceptible to traffic-related injuries, such as high-speed environments, lack of protection for vulnerable road users (pedestrian, two-wheeler passengers/riders), and inadequate child restraint use.
3. **Recommend policy options** within a Safe System Approach, emphasizing all aspects of the system. This framework promotes a system-wide change, emphasizing shared responsibility and minimizing crash impact forces.

Key findings include:

1. **Global burden:** Road traffic injuries are the leading cause of death for those aged 5–19 years. Children and adolescents in LMICs face up to three times higher rates of road traffic deaths compared to those in high-income countries. The lack of adequate infrastructure and safety measures in these regions exacerbates the risk.
2. **Unique vulnerabilities:** Children and adolescents are particularly vulnerable due to their physical and developmental characteristics. The risk varies by age, with younger children more likely to be injured as pedestrians and older children as cyclists or motorcyclists.
3. **Economic impact:** Road injuries impose a significant economic burden on families and societies, curtailing educational potential and impeding economic growth. Improving road safety for children can yield long-term economic benefits by preserving future human capital.
4. **Policy gaps:** There is inadequate legislation in LMICs on critical issues such as child restraint systems, front-seat seating restrictions, impaired driving, powered two-wheelers and minimum age for driving. Many countries lack robust enforcement, and data gaps further hinder targeted interventions. High-income countries tend to have more comprehensive policies, but implementation remains uneven even in these settings. Addressing these gaps is crucial for improving road safety for children and adolescents globally.

Key recommendations include:

- **Safer speeds:** Implement speed limits of 30 km/h along routes and itineraries where children walk to and from schools and enforce traffic-calming measures to enhance their safety.
- **Safer vehicles:** Mandate advanced vehicle safety standards to protect pedestrians and young passengers. Promote child-appropriate safety equipment, such as helmets, child restraints and seat belts.
- **Safer road users:** Improve enforcement of minimum alcohol age (for purchasing and drinking) and blood alcohol concentration (BAC) limits for novice drivers (0.02 g/dl). Enforce drug-use limits in children and adolescents.
- **Post-crash care:** Guarantee universal access to emergency care. Improve availability of age-appropriate post-crash care equipment, infrastructure and skills to ensure timely and correct medical assistance for injured children and adolescents.
- **Safer infrastructure:** Expand the construction of well-designed, continuous sidewalks and safe walking paths, particularly along school routes, to provide children and adolescents with secure, traffic-separated spaces for walking and reduce pedestrian-vehicle collisions.

The report also advocates for:

Multi-sectoral collaboration: Collaboration across sectors such as health, transport, education, environment and urban planning is crucial. Efforts to enhance pedestrian infrastructure, enforce speed limits and support healthy, safe mobility and sustainable transport can reduce road traffic injuries and promote broader societal benefits, such as improved urban environments and public health.

Data and monitoring: Establish national data collection systems disaggregated by age, gender and road user type to monitor the impact of interventions and guide future actions. Incorporate child-specific injury and fatality metrics into existing road safety databases.

Empowering communities and youth: Engage communities, particularly youth, in the co-design of road safety initiatives. Expand educational programmes in schools, focusing on road safety skills and first-aid training.

By acting on these recommendations, policymakers and stakeholders can work towards a safer future for children and adolescents on the roads.

Introduction

Every year, an estimated 181,453 children aged 0–19 years lose their lives to road traffic crashes globally.[1] Many more are injured, often with severe and long-lasting consequences to their health and long-term prospects.[1,2] These tragic events cause immeasurable suffering for families and communities and impose a significant economic burden on societies. Road traffic injuries are the leading cause of death for children and adolescents aged 5–19 years globally.[3], and this is also true on the national level for most countries in the world, especially in LMICs, underscoring an urgent need for focused advocacy and targeted interventions in this vulnerable age-group.

Children and adolescents are uniquely vulnerable on the roads. In LMICs, where this age group constitutes a significant portion of the population, the risk is subsequently greater. Rates of road traffic death among children and adolescents are up to 3 times higher in LMICs than in high-income countries.[4] LMICs often lack adequate infrastructural and safety measures, such as road markings, raised intersections, sidewalks and traffic lights, as well as enforced road safety policies, that are needed to protect young road users.

This report addresses critical road safety issues for children and adolescents by examining the current global burden, identifying policy gaps and presenting evidence-based solutions tailored to this age group. It draws on data from global reports, available statistics and other sources to provide a comprehensive overview of the challenges and opportunities in enhancing child and adolescent road safety.

The report has three main objectives:

- To assess the global status of child and adolescent road safety;
- To highlight the unique vulnerabilities and risks children and adolescents face on the roads; and
- To recommend effective strategies and policies aimed at reducing traffic injuries and fatalities among young road users.

Focusing on children and adolescents, the report seeks to achieve significant long-term benefits, including reducing fatalities and injuries, preventing lifelong disabilities and societal impacts, and fostering a culture of safety that extends into adulthood.

In addition to addressing road safety concerns, multi-sectoral collaboration provides valuable co-benefits beyond preventing road injuries. Collaborative efforts among sectors including health, transport, education, environment and urban planning can promote broader societal benefits, such as improved urban environments, enhanced public health and community well-being. For example, efforts to enhance pedestrian infrastructure and enforce speed limits reduce road traffic injuries and encourage walking and cycling, contributing to reduced air and noise pollution, increased physical activity and overall better quality of life. This approach aligns with the 'whole-of-government' and 'whole-of-society' strategies for tackling complex public health challenges, as multi-sectoral actions address various interlinked determinants of health and safety, providing comprehensive and sustainable solutions to support the attainment of SDGs.[5]

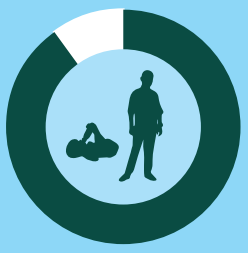
In this report, we utilize data collected for the WHO Global Status Report on Road Safety 2023 (the latest available data is from 2021, published in 2023) as well as data from the WHO Global Health Estimates (GHE) for 2021 (released in 2024). We also utilized data from the UNICEF regional reports for child and adolescent road safety. Lastly, we conducted an online, purpose-built survey of UNICEF country offices to augment the aforementioned data and address gaps in child- and adolescent-specific data collection. All UNICEF offices were invited to participate in the survey.

This report is intended for policymakers, practitioners, non-governmental organizations (NGOs) and global advocates, providing them with the knowledge and tools to prioritize and improve child and adolescent road safety. The report emphasizes the imperative of protecting our youngest and most vulnerable road users and calls for coordinated global efforts to create safer and healthier roads, environments and mobility for children and adolescents.

By implementing the strategies outlined in this report, we can make significant strides toward achieving SDGs related to road safety and ultimately save lives. We aim to amplify the voices of youth, who are often unheard an unheeded in the design and implementation of road safety policies.

1 Rationale for the focus on children and adolescents

This report complements the WHO *Global Status Report on Road Safety 2023*,[3] specifically emphasizing children and adolescents as a high-risk group. The rationale for prioritizing this demographic is detailed in the following sections.



90%

There are 3.3 billion children and adolescents aged between 0 and 19 years – 90 per cent of them live in lower- and middle-income countries.

1.1 Demographics and economics

Children and adolescents constitute a significant portion of the population, particularly in LMICs, where they often represent a substantial demographic group, up to 50 per cent or more. Because of this age structure, tackling road safety in LMICs necessarily entails focusing on children and the youth. The risk to children and adolescents on roads is disproportionately higher than for other ages. Roads are not built for children and adolescents, and road safety interventions are often not designed with them in mind.

The economic rationale for focusing on child and adolescent road safety is compelling. Road injuries inflict a substantial economic burden on families, curtail the educational potential of children and impede economic growth. The economic benefits of improving road safety in this age group are potentially longer lasting, with gains in productivity of future adults evident throughout their lifespan. Preventing injuries and fatalities in this demographic protects future human capital with a potential demographic dividend from preservation in the share of the working-age population and maximizing their ability to work without disability.

Health system utilization for injuries is high in the child and youth age group, and reduction in burden entails a reduction in the impact and cost on the health system.[4] Furthermore, many road safety prevention interventions, including (but not limited to) school-zone environmental modification for reducing speed, bicycle helmet laws and booster seat regulations, can be highly cost-effective and compare favourably to other public health interventions.[6] According to a recent study, the socioeconomic impact of life years lost from road traffic injuries with child victims aged 0–17 years across eight countries was US$21.8 billion a year.[7] The same study found that applying best practices to improving the road infrastructure, educational campaigns aimed at children and communities, and regulation could save an annual US$1 billion in the overall socioeconomic costs due to road traffic crashes in just eight countries.

In addition, measures to prevent road crashes help educate children and adolescents during an important period of their lives, helping them become safer, more road-aware adults, thus providing sustainable improvements in road-user behaviour for themselves and future children in the longer term. Child and adolescent road safety initiatives are often the gateway to implementing broader road safety initiatives in the wider population. For example, child helmet programmes often facilitate adult helmet adoption and work on child restraints is often a first step for implementing seat belt laws in all seating positions.

Addressing road safety in this crucial age group will contribute to SDG targets 3.6 (road safety deaths and injuries) and 11.2 (provision of safe, affordable, accessible and sustainable transport systems) as well as have indirect co-benefits for several other SDGs including SDG 4 (education), SDG 5 (gender equality), SDG 8 (decent work and economic growth) and SDG 11 (sustainable cities and communities) (Figure 1).

Figure 1. Contribution of road safety to different SDGs

Source: Ma T, et al. Inj Prev 2020;0:1–6. doi:10.1136/injuryprev-2020-043850

1.2 Unique vulnerability of children

Children and adolescents are uniquely vulnerable to road traffic injuries due to a variety of age-dependant factors (Figure 2). Road injuries are, consequently, the leading cause of death in the 5–19-year age group. They are also within the top ten of the disability-adjusted life years (DALYs) lost in the 15–19-year age group (see Section 2 for more details).[2]

Figure 2. Modifiable and non-modifiable factors for road traffic injuries among children and adolescents

Non-modifiable factors			
Age	Sex	Size	Cognition
Development		Hearing & seeing	

Modifiable factors		
Risk taking	Lack of experience	Peer pressure
No safety equipment	Poor infrastructure	Unsafe vehicles
Lack of knowledge		Inadequate post-crash response

Source: Child and Adolescent Road Safety in East Asia and Pacific nations, UNICEF 2023.

1.3 Differential road-crash risk across the life course

The age and type of road user also play crucial roles in determining the risk of fatality. Pedestrians, cyclists and motorcyclists account for a large proportion of child and adolescent fatalities in road traffic crashes. For those between the ages of 1 and 9 years, pedestrian incidents are the most common, while older children and adolescents are more likely to be injured or killed as cyclists or motorcyclists. In addition, young children and youth are at risk while riding as passengers in vehicles that lack age-appropriate child-restraint systems, while their older counterparts may be involved as young drivers (Figure 3)[5]

Figure 3. Common involvement of children and adolescents in road crashes by broad age groups

Young children

Affected as pedestrians

Young children and adolescents

Affected as passengers

Older children and adolescents

Affected as cyclists and on powered 2/3 wheelers

Older children and young adults

Affected as novice drivers

Risk factors for road crashes and the pattern of injuries change with age (Figure 4). The age ranges from 0–19 years can be divided into broad groups with respect to road injury risk.

Figure 4. Risk-age categories for child and adolescent road injuries

Infants
0 to 12 months

- Highly dependent on adult mobility and supervision.
- Low overall risk.

Children
1 to 4 years

- Highly dependent on adult mobility and supervision.
- Passenger vulnerability when without age-appropriate child restraints.

Under 5's

Older children and adolescents
5 to 9 years

- Independent mobility established
- Coincides with the age of walking and running – pedestrian vulnerability
- Passenger vulnerability – require protection from car restraints
- Developmental factors
- Becoming independent riders – helmet usage

Adolescents
10 to 19 years

- Consists of novice drivers
- Users of powered 2/3 wheelers
- Risk-taking behaviour and outdoor play
- Influence of alcohol
- Influence of peers
- Behavioural factors
- Pedestrian, passenger and driver vulnerability

Infants
Birth to age 1 year

Infants typically mirror the road usage patterns of the adults accompanying them, as they are not independently mobile. They may be involved in crashes as passengers in vehicles or while being carried by older pedestrians; however, the overall risk of road injury is low because they are less likely to be on the roads. There is a risk of injury for infant passengers without proper child restraints, but when appropriate child restraints are correctly used, the risk of injury is significantly reduced – comparable to the level of protection that properly worn seat belts provide adults.

Children
Ages 1 to 4 years

Children in this age group are still largely dependent on adults for mobility. However, improper use of child restraints and car seats heightens the risk of injury in case of a crash. Road crash risk in this age group is also relatively low for the same reasons as for the younger age group. There is an important group of children as passengers on powered two or three wheelers. Their physical vulnerability, combined with the limited availability of appropriate child restraints for these vehicles, increases the likelihood of severe injuries in the event of a crash. This is a significantly understudied area with scarce research into risk factors and a scarcity of effective interventions to mitigate these risks.

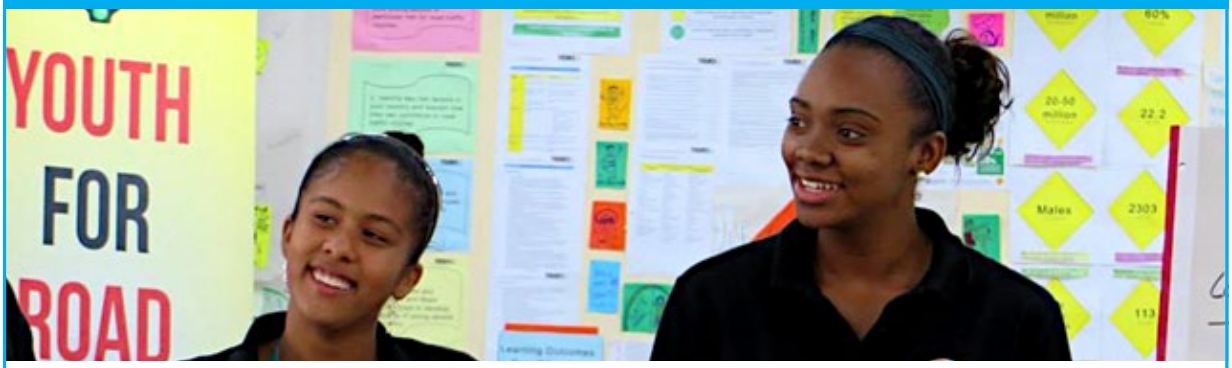
Older children
Ages 5 to 9 years

Children become more independent at this age and start walking to school or playing outside more frequently. Their ability to judge the speed and distance of vehicles is not fully developed, making them vulnerable as pedestrians. They may also be vulnerable as passengers in powered two or three wheelers. As they become independent bicycle and scooter riders, they are also vulnerable as riders.

Adolescents
Ages 10 to 19 years

Adolescents experience heightened risk as they become independent road users, including cyclists, motorcyclists and young drivers. Behavioural factors related to their age also begin to play a part. They are prone to risky behaviours such as speeding and not wearing helmets or seat belts. Road crash risk peaks in this age category. Adolescents in this age group are involved in crashes as either vulnerable road users – pedestrians, cyclists or motorcyclists, or as passengers in powered vehicles. The exact proportion depends on the predominant road usage in the country. In LMICs, this age group tends to be more involved as vulnerable road users, while high-income countries report more fatalities among adolescents as motor vehicle occupants.[8] Data on this are mostly available at the country level, and there are no available global data to directly compare high-income and low-income countries.

Box 1. Youth engagement in road safety in Belize



The road safety situation around schools in Belize presents a significant safety risk for children, adolescents and youth. High speeds, insufficient pedestrian crossings, a lack of sidewalks, and a prevalence of drinking and driving and distracted driving all lead to an unsafe situation for children on the roads.

In response, the Belize Youth Road Safety Project was established to empower young people to take direct action. Initially, the project engaged young people to conduct:

- Traffic and pedestrian counts in school zones to identify high-risk areas.
- Speed surveys to monitor vehicle speeds around schools
- Surveys of students and teachers regarding their commute safety
- Baseline assessments of school infrastructure and road conditions around schools

The project then worked with various government, education and private sector partners to upgrade road safety infrastructure around schools, particularly at Buttonwood Bay Nazarene Primary School, which was identified as high risk. The project also initiated training of government representatives and a Training of Facilitators for young people from the Belizean Youth for Road Safety (BYRS) organization.

As a result, the project managed to achieve the following key outcomes:

- A reduction of vehicle speeds in front of the school from an average of 24 mph to 14 mph, significantly enhancing safety for children and pedestrians.
- Installation of speed bumps, bollards and pedestrian crossings; repainting road markings; and putting up safety signage around school zones.
- Twenty-four government officials and other stakeholders (traffic officers, municipal authorities, educators) were trained in the School Area Road Safety Assessments and Improvements (SARSAI) methodology.
- Six Master Trainers and eight new facilitators from BYRS were trained for sustained impact.
- Approximately 125 youth were directly impacted through workshops and training, while the infrastructure upgrades and awareness campaigns indirectly impacted 2,000 students. Social media campaigns reached 66,987 people.

Relevant to: Safer roads Safer road users

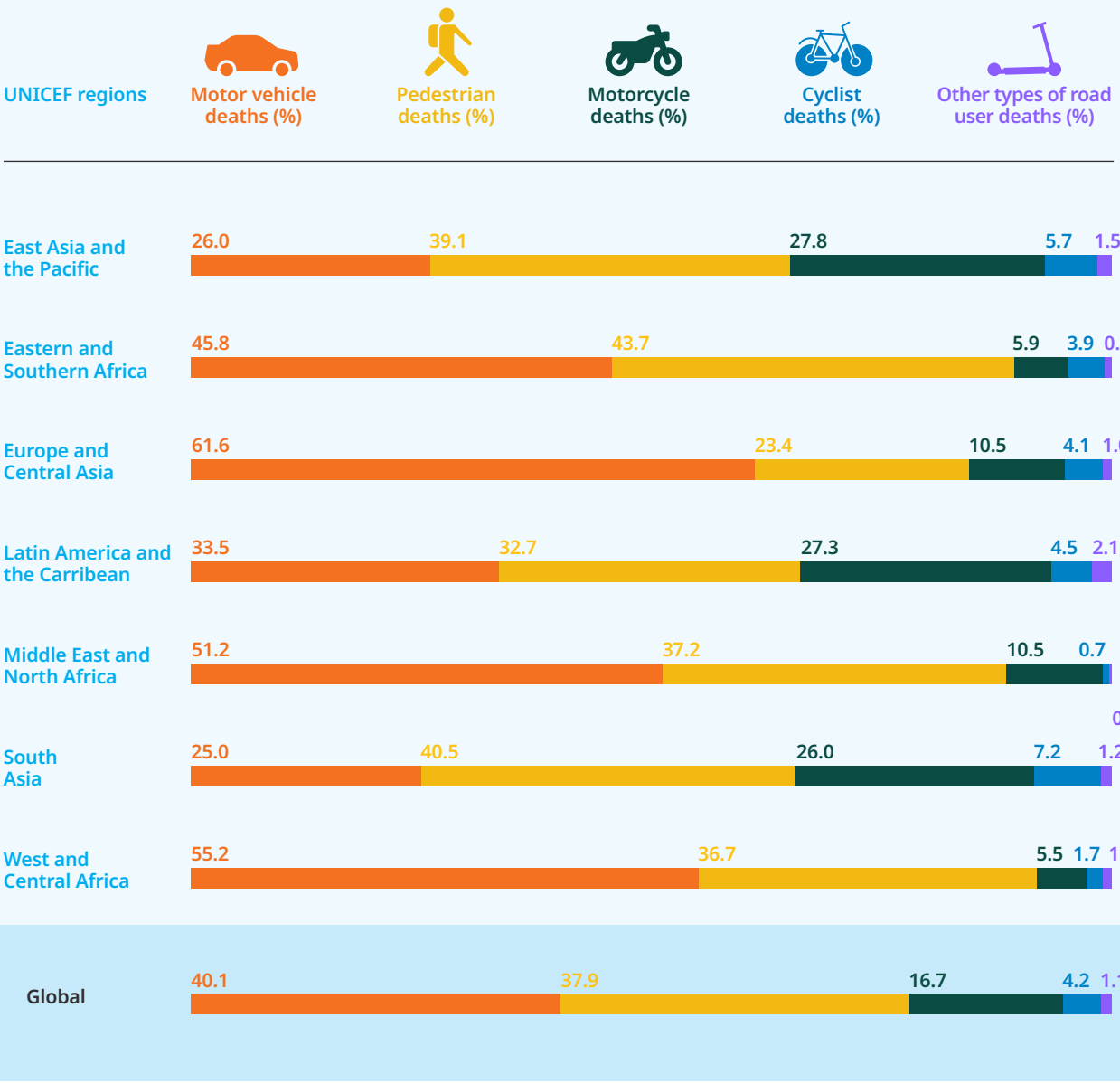
2

The global burden of road traffic crashes in children and adolescents

Of the estimated 1.19 million road traffic deaths reported in 2021,[3] 181,453 deaths occurred among children and youth aged 0 to 19 years of age[9]. Based on Global Burden of Disease 2021 data, road traffic injury remains the leading cause of death for children, adolescents and youth aged 5–19 years, most of whom live in low-income and middle-income countries (Figure 5).

Africa and South-East Asia face the highest burden of child and adolescent road traffic deaths. The African Region reports 46 per cent of all child fatalities as pedestrian-related, reflecting the predominant mode of travel of children in these regions. By contrast, in the European Region, 50 per cent of road deaths among this age group occurs among vehicle occupants, showcasing regional differences in exposure and protective measures. Powered two-wheelers are prominent in South Asia, East Asia, and the Pacific, while they are much less so on the African continent and the Caribbean.

Figure 5. Percentage distribution of country-reported deaths by road user type and UNICEF region for children and adolescents aged 0–19 years, 2021



Source: Global Burden of Disease Estimates 2021, IHME 2023

These data underscore a stark disparity: nearly 70 per cent of child and adolescent deaths occur in lower-middle- and upper-middle-income countries despite these nations having fewer road safety resources. High-income countries account for only 5.5 per cent of child and adolescent road deaths (Table 1). The fatality rate varies significantly across income levels, with low-income countries reporting a rate of 14.3 per 100,000 children, much higher than the rate in high-income settings. This trend illustrates the urgent need for global equitable access to road safety interventions.

Table 1. Proportion of global child and adolescent deaths (aged 0–19 years) from road traffic crashes, 2021

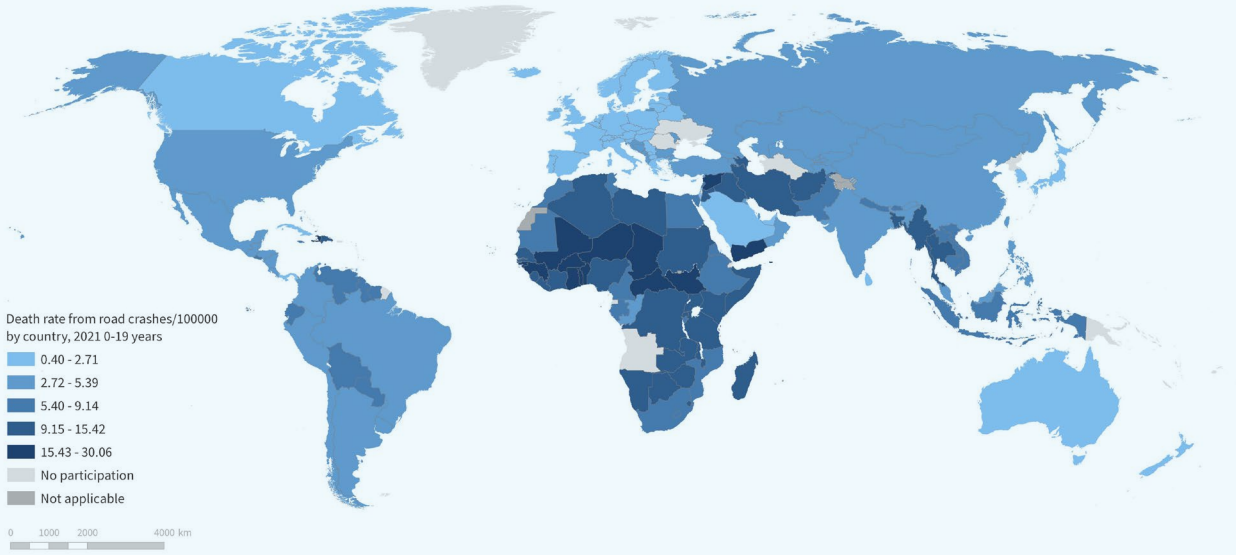
Country income level*	Number of road traffic deaths	Proportion of road traffic deaths	Road traffic injury death rate/100,000 (children aged 0–19 years)
Low-income	46,089	25.4%	14.3
Lower-middle income	77,118	42.5%	6.5
Upper-middle income	48,266	26.6%	5.2
High-income	9,980	5.5%	2.7
Global	**181,453**	**100.0%**	**6.8**

* According to World Bank classification

Source: Global Health Estimates 2021, World Health Organization 2024

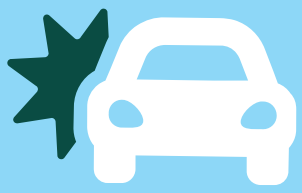
Despite having fewer vehicles, low- and middle-income countries experience most of the child and adolescent road fatalities. Almost 70 per cent of all road traffic deaths in children and adolescents occur in lower-middle-income countries and upper-middle-income countries combined (42.5 per cent and 26.7 per cent respectively), with low-income countries accounting for 25.4 per cent and high-income countries accounting for the remaining 5.5 per cent. In terms of road traffic injury rates, the top ten countries with the highest road traffic fatality rate are from highest to lowest: Guinea, Haiti, Guinea-Bissau, Niger, Chad, Yemen, Burkina Faso, Thailand and Benin (Figure 6). Six of these top ten countries are in Africa, highlighting the high burden on the continent.

Figure 6. Death rate from road traffic injuries (per 100,000 population) by country, for children and adolescents aged 0 to 19 years, 2021



Source: Global Health Estimates 2021, World Health Organization 2024

Leading causes of death globally show that road injuries are the top cause of death in the age groups of 10–14 and 15–19 years (Table 2). Other causes of child and adolescent injury also rank high in these age groups. This pattern is largely mirrored at the country level; however, many exceptions exist.



Road traffic injury is the number 1 cause of death for those aged 5 –19 years

Table 2. Leading causes of death† worldwide, children and adolescents aged 0–19 years, 2021

Rank	Ages 0–1 year	Ages 1–4 years	Ages 5–9 years	Ages 10–14 years	Ages 15-19 years
1	Preterm birth complications	Lower respiratory infections	Lower respiratory infections	Road injury	Road injury
2	Birth asphyxia and birth trauma	Malaria	Road injury	Drowning	Interpersonal violence
3	Respiratory infections	Diarrhoeal diseases	Diarrhoeal diseases	Lower respiratory infections	Collective violence and legal intervention
4	Congenital anomalies	Drowning	Drowning	Other unintentional injuries	Self-harm
5	Diarrhoeal diseases	Measles	Congenital anomalies	Congenital anomalies	Maternal conditions
6	Malaria	Congenital anomalies	Malaria	Diarrhoeal diseases	Cardiovascular diseases
7	Neonatal sepsis and infections	Tuberculosis	Meningitis	COVID-19	COVID-19
8	Tuberculosis	Protein-energy malnutrition	Other unintentional injuries‡	Meningitis	Tuberculosis
9	Syphilis	HIV/AIDS	Tuberculosis	HIV/AIDS	Other unintentional injuries
10	Meningitis	Meningitis	HIV/AIDS	Tuberculosis	Congenital heart anomalies

Source: Global Health Estimates 2021, World Health Organization 2024

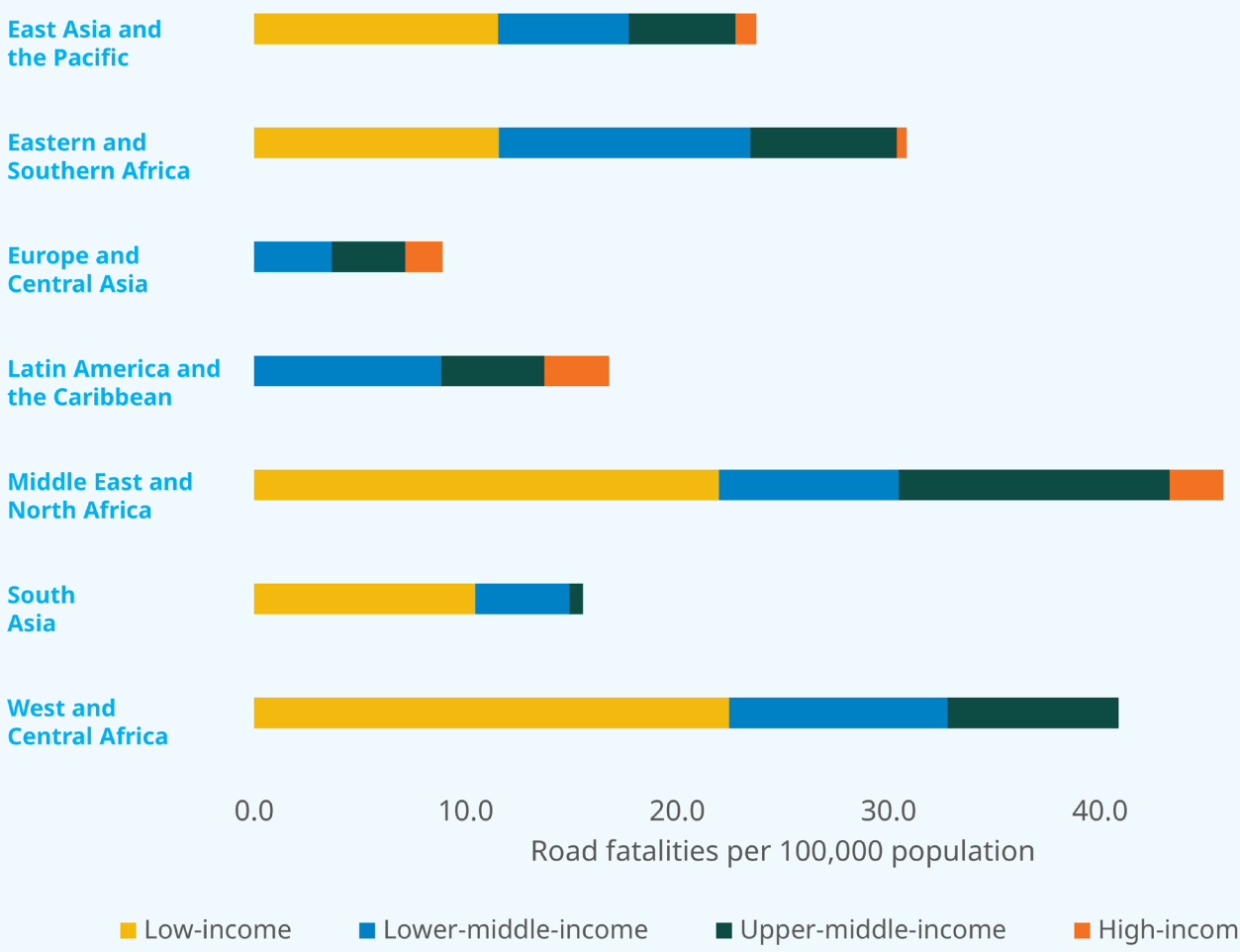
Note: Injury causes highlighted in colour.

† Causes of death confined to level 3 causes of death

‡ Includes (among others) the following examples: Contact with various venomous and non-venomous animals and plants such as snake bites and stings, foreign body injuries, exposure to electric current, radiation, forces of nature and extreme ambient air temperature, etc.

On the regional level, the ranking is largely similar to that of the global picture. The West and Central Africa, and Eastern and Southern Africa regions have the highest road injury fatality rates in children and adolescents, followed by the Middle East and North Africa, and Latin America and the Caribbean (Figure 7). Road traffic fatality rates are particularly high in lower-middle-income countries globally, but low-income countries in East Asia and the Pacific region have the highest rate among income groups.

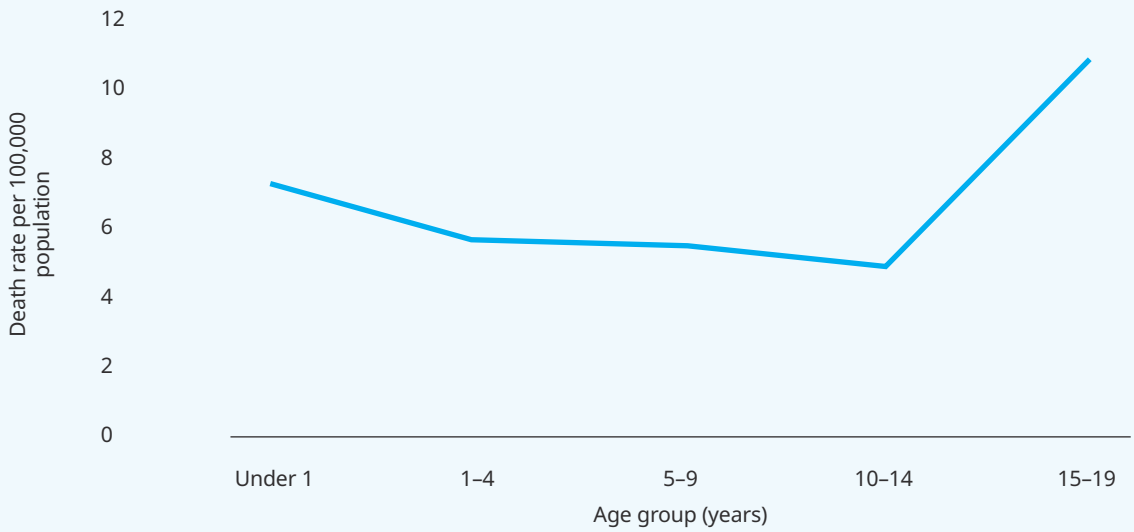
Figure 7. Road traffic fatalities (per 100,000 population) among children and adolescents aged 0–19 years by UNICEF region and country-income level, 2021



Source: Global Health Estimates 2021, World Health Organization 2024

Road traffic fatality rates rise sharply from the age of 10 years and older, and by the 15–19-year age group, road fatalities are the leading cause of death (Figure 8).

Figure 8. Road traffic fatality rate (per 100,000 population) by age range, 2021



Source: Global Health Estimates 2021, World Health Organization 2024

3

Policy options for prevention of road crashes in children and adolescents

Available interventions for preventing road injuries in children and adolescents are best approached using the Safe Systems approach for road safety. This approach aims to provide a framework for building a complete system that prevents crashes, minimizes impact forces to prevent serious injury or death if crashes do occur, and ensures that those injured are rescued and receive adequate trauma care. It is based on four guiding principles that should underpin rational policymaking in road safety. These are:

1. People make mistakes that can lead to road crashes.
2. The human body can physically tolerate crash forces only up to a point before harm occurs.
3. There is a shared responsibility to prevent crashes among all stakeholders who design build, manage, and use roads and vehicles; and not just an individual responsibility for people who use the roads.
4. All parts of the system must be strengthened to multiply their effects; and this means if one part fails, road users are still protected.

These principles involve a paradigm shift in the approach to road safety by moving away from a focus solely on behavioural change interventions to a much more holistic approach to changing the whole system. The following section shares policy options for safer speeds, vehicles, people, roads and post-crash care (Figure 9).

Figure 9. The safe system approach to road safety

Source: FHWA, US Department of Transportation (10)

Each country, region or city must determine its own path, strengthening its unique weaknesses to create a safe system. There is no one pathway to reducing road crashes, but it should be approached by implementing interventions and policies systematically and steadily. The experiences of countries worldwide have given valuable insight into what works. The safe systems approach underpins this list of interventions and draws from evidence-based recommendations for road safety policies.[6, 11]

Injury prevention policies offer broad co-benefits, alleviating strain on healthcare systems, fostering economic growth, and promoting environmental sustainability through safer infrastructure and efficient resource use. These policies thus create valuable opportunities for multisectoral collaboration to improve public health and safety, and integration into existing programmes. Road safety should be integrated into existing health, education, transport, urban planning, economic and climate change policies. This type of multistakeholder engagement will help foster scaling, sustainability and ownership in each country.

Box 2: Policy, infrastructure, awareness and education: System-wide road safety for children in Jamaica

As urbanization increases in Jamaica, motorized traffic and paved roads are contributing to a rise in child road fatalities, particularly around schools. In response, **UNICEF** partnered with the **National Road Safety Council (NRSC)**, the Ministries of **Transport, Education and Youth,** and the **Jamaica National Foundation** to address child road safety.

A **national child road safety assessment** identified high-risk schools and policy gaps, engaging the NRSC and key stakeholders for decision-maker support. Based on these findings, a series of interventions were implemented:

- Crosswalk Enhancements: 8 major crosswalk upgrades in 7 parishes and rehabilitation of 50 school crosswalks.
- Education Initiatives: Road safety education for over 12,500 primary students in partnership with the Jamaica Constabulary Force (JCF).
- Public Awareness Campaign: A media campaign reaching 14.4 million via TV, radio, and social media.
- Curriculum and Resources: Enhanced in-school road safety curriculum with child-focused materials and an adolescent driver curriculum now used in schools.
- Policy Support: Technical assistance for the National Road Safety Policy and Action Plan, aligning with the Global Plan for Road Safety 2021–2030.

Relevant to: Safer roads | Safer road users | Post-crash care

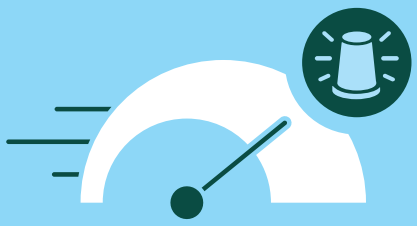
3.1 Safer speeds

The speed at which a vehicle travels when a road crash occurs is a key determinant of outcome. The likelihood of fatality after a road traffic crash is increased by 11 per cent for every 1 km/h increase in speed.[12] Implementation of the following policy options is relevant to the reduction of the likelihood of child and adolescent fatalities.

- Enacting and enforcing legislation requiring a **maximum speed limit of 30 km/h on roads around schools.**
- Enacting and enforcing legislation to reduce **maximum speeds on all urban roads to a safe level.**
- Implementing **traffic calming measures** (linked to safer roads and infrastructure).

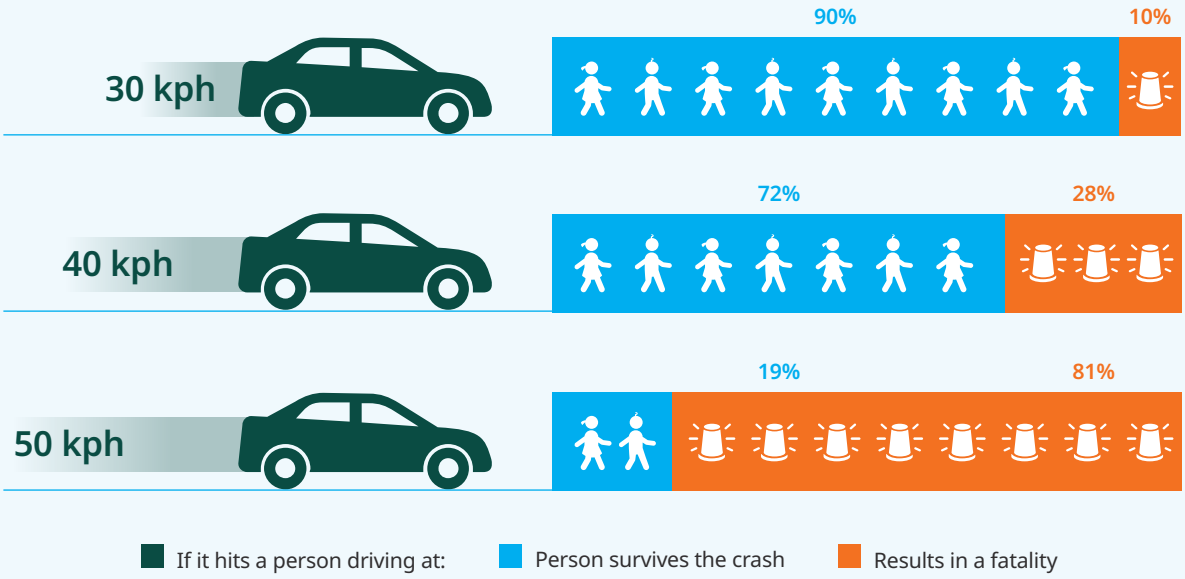
Available research shows a direct relationship between the speed of an incoming vehicle and the likelihood of mortality after a road traffic crash. These thresholds for speed and mortality are well established for adults involved in road traffic crashes, and most of the available research focuses on the adult age group.

However, the specific data related to children is sparse. Many authoritative datasets do not include children under the age of 15 years. The speed threshold for a given mortality in children and adolescents may be lower because of their smaller relative size and weight, i.e., slightly larger estimates of risk.[13]



Every 1 per cent increase in mean speed produces a 4 per cent increase in the fatal crash risk and a 3 per cent increase in the serious crash risk.

The likehood of fatality increases with vehicle speed



Source: Hussain, 2019. Includes combined data from children and adults.

Speed is a key contributing factor for a road crash, and for serious injury and mortality in the event of a crash; however, it is challenging to call speeding a 'cause' of a crash. This requires in-depth crash investigations utilizing granular data from black boxes, witness statements and skid mark analyses, which are inconsistently performed. Despite this, **speeding is one of the most commonly reported *contributing factors* to crashes**[14] and younger drivers, particularly those under 25, are disproportionately involved in speed-related crashes.[15]

In the USA, between 2015 and 2019, **43 per cent of all fatal crashes involving teen drivers (aged 16–19 years) were attributed to speeding,** compared to 30 per cent for drivers aged 20 years and older. Male teen

Speed is a common contributing factor in crashes involving:

Younger or novice drivers

Males

Late-night driving

Driving with other teens in the vehicle

drivers are more likely to be involved in speeding-related crashes than female teen drivers. Late-night driving (midnight to 5 a.m.) and driving in the presence of peers further exacerbate the risks associated with speeding for teen drivers.[16] While driving experience, judgment and risk-taking behaviour contribute to this, it is important not to attribute crashes only to these behavioural factors and to remember that speeding tends to interact with other factors such as road conditions, driver experience, and vehicle safety features, complicating direct attribution. Speed, therefore, plays a key role in the occurrence of and outcome after a crash, but it is not usually an isolated cause of crashes.

Box 3: Collaborative approach to safe school zones in Moldova

Moldova has achieved remarkable progress in enhancing road safety for children through a unique collaboration between philanthropy, civil society, United Nations agencies and national stakeholders. Spearheaded by UNICEF Moldova, the Automobile Club of Moldova (ACM) and the Eastern Alliance for Safe and Sustainable Transport (EASST). This collaborative approach exemplifies how multi-sector partnerships can drive impactful change.

The coalition worked closely with the Moldovan government, local public authorities and international partners to implement **30 km/h speed limits in school zones,** a critical measure for reducing road traffic injuries. Using evidence-based tools, such as the International Road Assessment Programme (iRAP) Star Rating for Schools (SR4S), assessments were conducted in three cities – Edinet, Ialoveni, and Soldanesti – to identify high-risk school areas. These assessments guided infrastructure upgrades including safer pedestrian crossings, road signage and new traffic-calming measures for 18 schools, ensuring safer journeys for children.

Education and community engagement were integral to this success. Over 360 teachers were trained to deliver road safety education, reaching over 10,000 children and caregivers. Road safety awareness campaigns further amplified the programme's impact.

This partnership between philanthropy (supported by the FIA Foundation), civil society (EASST and ACM), UNICEF and government stakeholders underscores the power of collaboration in creating safer environments for children. Moldova's model showcases how aligning global tools, local leadership and community action can advance sustainable road safety solutions globally.

Relevant to: Safer roads | Safer road users | Safer speeds

3.2 Safer vehicles

Interventions that make vehicles more visible to pedestrians.[17] or safer in the event of a crash are known to be effective in reducing the risk or severity of crashes. These interventions in include the following.

- Using daytime running lights.
- Mandating the installation of energy-absorbing crumple zones.
- Redesigning vehicle fronts to make them more 'pedestrian friendly', including adherence to international safety regulations as follows:
    - UN Regulation No 127 laying down uniform provisions concerning the approval of motor vehicles regarding their pedestrian safety performance or
    - Regulation (EU) 2019/2144
- Mandating reversing sensors.
- Installing alcohol interlock systems in the vehicles of people convicted of drinking and driving.
- Making pedestrians visible to drivers with lights, reflective clothing, and light-coloured clothing.
- Expediting adoption of antilock braking systems (ABS) in powered two-wheelers and automatic emergency braking (AEB) in powered four-wheelers.
- Adopting and promoting the Global New Car Assessment Programme (Global NCAP) as a benchmark for vehicle safety standards.
- Encouraging new vehicle designs to incorporate measures such as ISOFIX child restraint anchorage points.

Always ensure children are properly secured in a suitable child restraint system (car seat, booster seat, or seat belt) according to their age, weight and height. This greatly reduces the risk of injury in a crash. Most new cars are now equipped with ISOFIX child restraint points, an international standard for securely attaching child safety seats. ISOFIX simplifies the installation process, ensuring car seats are properly secured without relying solely on seat belts.

3.3 Safer road users

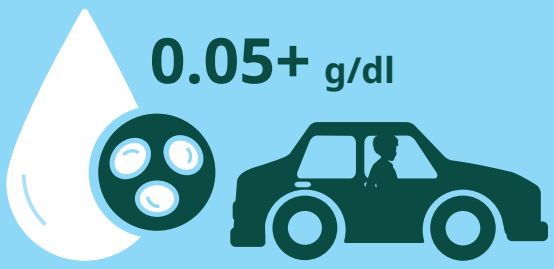
Impaired driving

Reducing impaired driving from alcohol or drugs is a key target of road safety interventions. The risk of a road traffic crash begins to rise significantly when a driver has a blood alcohol concentration (BAC) of around 0.04 g/dl.[18] Consuming alcohol increases the chance of a crash occurring but also the likelihood of death or serious injury in the event of a crash (19). Age is a factor that has a bearing on the risk of young people who have consumed alcohol, incurring road traffic injuries. Inexperienced young drivers who have consumed alcohol have a much higher risk of a crash, particularly when they are also carrying passengers.

While most literature on the subject focuses on the impact of the impaired drivers of powered vehicles, there is also a significantly increased risk of involvement, severe injury, delayed seeking of medical care and death for an impaired pedestrian or cyclist in the event of a crash.

The following strategies can reduce impaired driving.

- Limiting the sale of alcohol and drugs to children and adolescents.
- Legislation prohibiting alcohol and drug-impaired driving.
- Legislation mandating a blood alcohol concentration (BAC) limit for young or novice drivers (≤0.02 g/dl for novice drivers).
- Blood alcohol content and drug testing carried out for all involved road users in case of a crash.



Inexperienced young adults driving with a blood level concentration level of 0.05+ g/dl have a 2.5 times higher risk of a crash compared with older, experienced drivers.

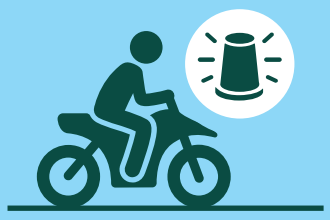
Safety equipment protection for child and adolescent vehicle occupants

Further strategies to prevent injury during a crash include helmets and child restraint systems and prohibiting vulnerable passengers from the front seats.

Child restraint systems are tailored to the child's developmental stage. Like seat belts, they secure the child in the vehicle, distributing the force of a collision across broad areas of the body. This design helps reduce the risk of severe injury.

Wearing a helmet is one of the most effective strategies for reducing the chances of sustaining a severe head injury after a crash. Helmets also reduce the likelihood of dying from a head injury and reduce the length of time spent in the hospital. Helmets available for motorcycles have widely variable quality and, when worn, must meet a known quality standard to be effective.

Children secured in age-appropriate restraints are significantly less likely to die in a road crash compared to those who are unrestrained.



Young road users are more likely to take risks, including riding on a motorcycle without a helmet.

The following strategies can improve the uptake of safety equipment usage.

- Setting laws that mandate helmets for all riders of two- and three-wheelers on all roads and all engine sizes.
- Enacting and enforcing legislation regarding child seat standards and/or child restraints/child seat anchoring systems.
- Legislation on the minimum age/height children are allowed as passengers in the front seat of a vehicle (e.g., 135 cm to 150 cm and 12 years and older).
- Promoting the use of appropriate child restraints for infants and children.

Children and adolescents are at a significantly higher risk of injury when seated in the front seat of a vehicle during a crash. The front seat is designed primarily for adult occupants and exposes children and adolescents to the full force of a front impact as well as secondary dangers such as airbag deployment, which can cause severe injuries to smaller, more vulnerable bodies. Rear seats and properly installed child restraint systems provide a safer environment for young passengers. These systems are tailored to a child's developmental stage, ensuring that crash forces are distributed across stronger body parts, thereby minimizing the risk of severe injury. Enforcing laws that prohibit children under a certain age or height from sitting in the front seat is a critical measure to enhance child passenger safety and prevent life-threatening injuries.

67%

Nearly 67 per cent of countries have laws prohibiting children from sitting in the front seat.

Driver licensing

Newly licensed novice drivers often lack the skills and experience to recognize potential dangers, putting them at a higher risk of crashes. Their immaturity and limited driving experience result in disproportionately high crash rates.

Graduated licensing systems are designed to address this by gradually allowing new young drivers to gain driving privileges under controlled and supervised conditions. These systems aim to protect beginners while they learn, encouraging them to gain driving experience in low-risk situations.

The following strategies can be employed.

- Supervising driving practice (many hours).
- Setting laws that restrict maximum speeds and night-time passenger numbers and require zero blood alcohol limits on novice and newly licensed drivers.

The crash rate for novice drivers is highest immediately after they receive their license, especially for young male drivers.

IMPORTANT NOTE
Road safety education

It is important to recognize that **as an isolated intervention, road safety education alone is ineffective in reducing road traffic injuries.** However, when combined with other specific measures such as infrastructural modifications and traffic calming, education can be a crucial part of broader road safety strategies. While road safety education can enhance children's knowledge and awareness of road risks in the short term, and practical training can improve their skills and muscle memory, this knowledge does not necessarily lead to safer road behaviour or a reduction in injuries.

3.4 Safer roads

The design and infrastructure of roads significantly influence the safety of children and adolescents. Historically, roads have been built primarily to accommodate adult motorists in passenger cars or trucks, with limited consideration for vulnerable road users such as pedestrians and cyclists, particularly children, and newer forms of transport that children tend to use, such as scooters, skateboards, etc. This lack of inclusivity has resulted in road environments that are unsafe for young users, contributing to the disproportionately high rates of injury and fatality among children and adolescents.

Infrastructure design with vulnerable users in mind

Modern road safety strategies advocate for child-friendly infrastructure that considers young pedestrians and cyclists' unique needs and behaviours. Road safety infrastructure assessments, such as the iRAP Star Rating system, highlight that many roads fail to meet basic safety standards for vulnerable road users (Figure 10). For example, many roads in low- and middle-income countries score below the 3-Star safety threshold, correlating with a markedly higher risk of fatal crashes. Raising road safety standards to 3-Star or better for pedestrians and cyclists could prevent thousands of child fatalities annually.

Figure 10. Star rating of roads – What makes a road safe?

Star Rating				
★☆☆☆☆	No sidewalk, no safe crossing, 60km/h traffic	No cyclepath, no safe crossings, poor road surface, 70km/h traffic	No motorcycle lane, undivided road, trees close to road, winding alignment, 90km/h traffic	Undivided road with narrow centerline, trees close to road, winding alignment, 100km/h traffic
★★★☆☆	Sidewalk present, pedestrian refuge, street lighting, 50km/h traffic	On-road cycle lane, good road surface, street lighting, 60km/h traffic	On-road motorcycle lane, undivided road, good road surface, >5m to any roadside hazards, 90km/h traffic	Wide centerline separating oncoming vehicles, >5m to any roadside hazards, 100km/h traffic
★★★★★	Sidewalk present, signalized crossing with refuge, street lighting, 30km/h traffic	Off-road dedicated cycle facility, raised platform crossing of major roads, 80km/h traffic	Dedicated separated motorcycle lane, central hatching, no roadside hazards, straight alignment, 80km/h traffic	Safety barrier separating oncoming vehicles and protecting roadside hazards, straight alignment, 100km/h traffic

Source: iRAP, 2024

School safety ratings and routes

Schools are critical focal points for road safety improvements. Many children are injured or killed on their journeys to and from school due to hazardous conditions, such as the absence of sidewalks, high vehicle speeds and poorly marked crossings. Programmes such as the Star Rating for Schools (SR4S) provide evidence-based frameworks for assessing and improving the safety of school environments. Interventions inspired by these ratings, such as lower speed zones around schools, enhanced pedestrian crossings and traffic calming, have proven effective in reducing crashes.

Rethinking road design for children

The concept of itineraries – planning roads based on typical child travel patterns – is gaining traction as a child-centred approach to road safety. This approach recognizes that children interact with road systems differently from adults. Their limited height, developing judgment, and unpredictable behaviour necessitate a fundamentally different design philosophy. Roads designed with children in mind prioritize proximity to safe crossings and enhance road visibility with items such as reflective signage and lighting. Principles for streets made for children and adolescents require streets to be safe and healthy, encouraging active mobility, play and interaction; accommodative of the different body sizes in this age-group; and inclusive. Tools for designing using this philosophy include the Designing Streets for Kids Guide by the Global Designing Cities Initiative.

Key interventions for safer roads include the following.

- Continuous sidewalks that provide safe, accessible routes for children.
- Dedicated cycling lanes that separate and protect cyclists from high-speed traffic, reducing the risk of collisions.
- Traffic calming measures such as speed bumps and curb extensions that encourage safer driving speeds in areas with heavy pedestrian activity.
- Shortening of crossing distances using curb extensions at intersections to reduce crossing distances and increase the visibility of children for drivers.
- Pedestrian-Only Zones, where feasible, transforming busy pedestrian areas, such as school routes and town centres, into vehicle-free spaces prioritizing pedestrian movement over vehicle speed.
- Improvement of schools to achieve at least a 3-Star rating or above.

Box 4. Safe school zones in Viet Nam

In 2021, Vietnamese children under 18 years were involved in 10.6 per cent of all road traffic crashes, highlighting a critical, ongoing issue across the country.

The International Road Assessment Programme (iRAP) revealed that only 10 per cent of assessed roads meet the 3-Star safety or better rating for pedestrians, with just 5 per cent having sidewalks and 9 per cent having crossings. High speeds around schools further increase the danger for children and young pedestrians.

To address this, the AIP Foundation, supported by the Global Road Safety Partnership, FIA Foundation and local partners, implemented the Slow Zones, Safe Zones (SZSZ) programme, focusing on infrastructure Improvements based on Star Rating for Schools (SR4S) results, advocacy for lower speed limits in school zones, along with increasing road safety public awareness, enforcement and education.

Collaborating with local, provincial, and national stakeholders, the project has adopted AI technology to identify road upgrade and speed management priority areas.

The impact of SSZ includes:

- Thirty-one primary schools in Pleiku City were assessed and upgraded, with 71 per cent achieving a 5-Star safety rating post-intervention.
- Gia Lai province mandated reduced speed limits around schools and plans to upgrade 56 school zones, with 12 already improved.
- In August 2023, the Ministry of Transport endorsed the SSZ Guide as the national reference for safe school zones, leading to a new action plan for safety improvements along national roads.

Relevant to: Safer roads Safer speeds

3.5 Post-crash care

Enhancing a country's emergency medical services can significantly reduce deaths and injuries from road traffic crashes. This improvement benefits children, young people, and all road traffic victims. Key areas include pre-hospital care, hospital care, and rehabilitation.

Laws governing the availability of emergency care services

Laws governing access to emergency care may vary through regulating the cost of care, free emergency care, or a mandate for financial risk protection. It is known that child and adolescent trauma care in a specialized paediatric hospital results in better outcomes after injury for children and adolescents treated there.[20] These laws may include the following.

- Laws that govern requirements for different levels of emergency care, including guaranteeing the provision of dedicated child and adolescent-only facilities.
- Setting up single emergency phone numbers.
- Equipping first responders with age- and weight-appropriate equipment, training and supplies.
- Ensuring child- and adolescent-friendly emergency care, surgery and rehabilitation.

Box 5: Post-crash care UNICEF Uganda project

Road traffic injuries are the second leading cause of death among young people aged 5–19 years in Uganda, with Mukono District identified as a major crash hotspot. Unfortunately, less than 25 per cent of the population can access emergency medical services (EMS), and many ambulances lack essential equipment and medications. There is also a significant absence of protocols for pre-hospital care and limited effective communication systems among dispatchers and ambulance providers, particularly outside Kampala.

In response, UNICEF is spearheading a programme to enhance post-crash care, starting with a pilot in Mukono District. This initiative focuses on strengthening primary health care systems, with local governments playing a crucial role in coordinating integrated health services, including EMS.

At the national level, the project aims to inform evidence-based interventions for policy development and ensure alignment with Ministry of Health (MoH) standards. Locally, it will establish 24/7 EMS, well-equipped ambulances, toll-free communication, and an EMS coordination structure at the district level, while also building the capacity of trauma emergency units in health facilities. The project also includes first aid training for first responders and community awareness raising.

Key partners include the World Health Organization for capacity support, Mukono District Local Government for implementation oversight, the Ministry of Health for strategic guidance, and Makerere University School of Public Health for research and evaluation. This project aims to reduce post-crash fatalities by 30 per cent by June 2026.

Relevant to: Safer roads | Post-crash care | Safer speeds

4

Current global status and gaps in policy measures

This section highlights the progress made in implementing policies that could specifically reduce road traffic injuries and fatalities among children and adolescents. It also identifies areas that require urgent attention and underscores the importance of implementing effective road safety measures. For a broader comprehensive overview (not specific to children and adolescents), see *The Global Status Report on Road Safety* 2023.[3]

The findings in this section serve as a crucial resource for policymakers, educators and communities striving to create safer environments for children and adolescents on the roads.

The infographic summarizes the global status of selected legislation related to children and adolescents, and highlights compliance in key road safety regulations across various countries that impact children and adolescents.

Safety regulations in road traffic

37.2%
of countries test all drivers involved in a fatal collision for alcohol

28.5%
of countries set BAC ≤0.02 g/dl for novice drivers

56.4%
of countries have a child restraint law **only**

19.3%
of countries have a child restraint law **and** anchor standards

90.1%
of countries have a distracted driving law in place

91.3%
of countries have drug driving laws

66.9%
of countries ban children from sitting in the front seat

33.7%
of countries set age/ height criteria for child motorcycle passengers

Source: Global Status Report on Road Safety 2023, World Health Organization.

* These data may differ slightly from those published in GSRRS2023 because they include 170 UN Members States and 2 territories, see https://cdn.who.int/media/docs/default-source/documents/health-topics/road-traffic-injuries/gsrrs23-indicators-for-participating-countries-or-territories.xlsx?sfvrsn=88035adb_3

4.1 Impaired driving

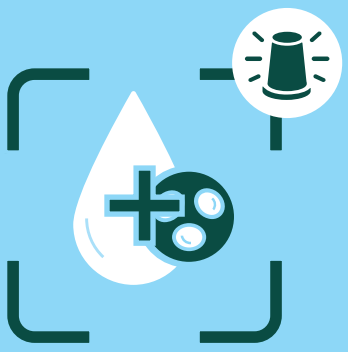
Impaired driving due to alcohol or drugs poses a significant threat to children. When drivers are under the influence, their abilities to operate a vehicle safely is severely compromised, increasing the likelihood of crashes. These crashes can result in devastating consequences to all involved, including children and adolescents who may be passengers in the impaired driver's vehicle, occupants of other vehicles, or pedestrians. Addressing impaired driving through legislation and enforcement is crucial to safeguarding the lives of children and adolescents on the road.

Alcohol

Drinking alcohol significantly increases the risk and severity of road traffic crashes, and children and adolescents are particularly susceptible to this for reasons previously detailed. Alcohol consumption not only endangers young drivers but also disproportionately affects children and adolescents as vulnerable road users, such as pedestrians and passengers. Implementing evidence-based drink-driving legislation (0.02 g/dl or lower) tailored to the local context, consistently enforced, and well understood by both enforcement officials and the public has proven to save lives in numerous jurisdictions.

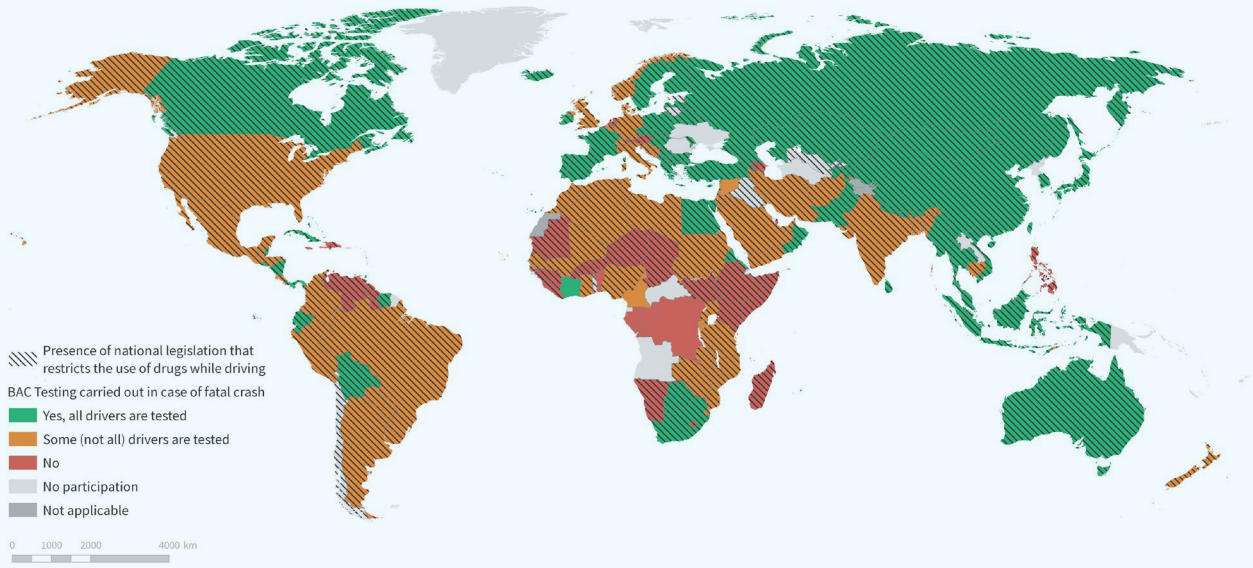
Two major policies impact adolescents and young people who have just started driving. These are (a) testing all drivers who have been involved in a fatal road traffic crash and (b) the implementation of a low BAC (WHO recommends 0.02 g/dl) for novice drivers.

Figure 11 shows the global status of policies for alcohol testing after a fatal crash. Many high-income countries, particularly in North America, Europe and parts of Oceania, test all drivers involved in fatal crashes, suggesting robust enforcement of road safety regulations. In many countries in Africa, the Middle East, South Asia and South America, only some drivers are tested. Some countries, in red, primarily in Africa and Asia, have no testing for drivers after fatal crashes, suggesting gaps in policy, enforcement, or resources for these investigations.



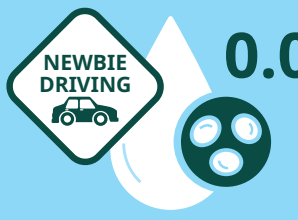
Only 64 countries test all drivers involved in a fatal collision for blood alcohol.

Figure 11. Testing for blood alcohol carried out in case of a fatal crash



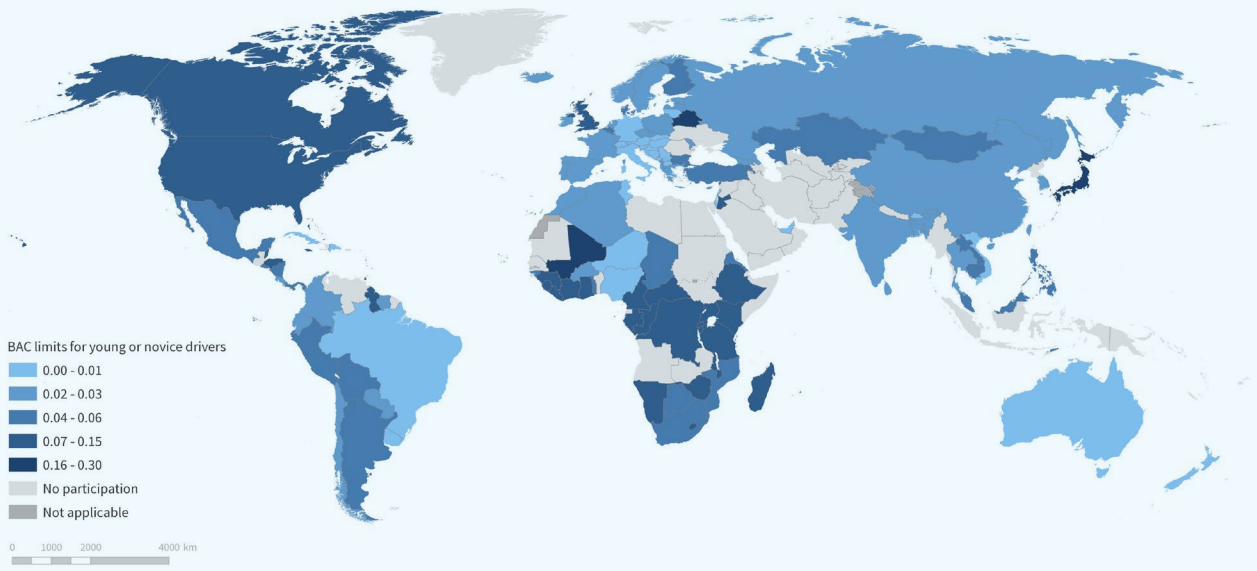
Source: Global Status Report on Road Safety 2023, World Health Organization.

Figure 12 shows the status of BAC limits for young or novice drivers, with lighter shades indicating stricter limits, approaching 0.00, and darker shades reflecting higher limits. Countries in light blue, such as some in Europe and South America, have implemented near-zero BAC limits for young or novice drivers, i.e., have strict policies and zero-tolerance. Countries in dark blue in Africa and North America have more liberal BAC limits, well above the recommended BAC of ≤0.02 g/dl.



Only 49 countries have blood alcohol concentration levels of 0.02 g/dl or lower for novice drivers.

Figure 12. Blood alcohol concentration limits for young or novice drivers

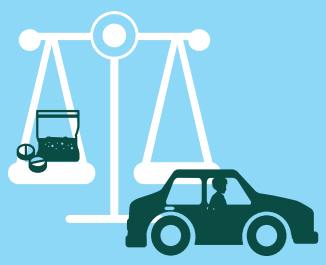


Source: Global Status Report on Road Safety 2023, World Health Organization.

Drugs

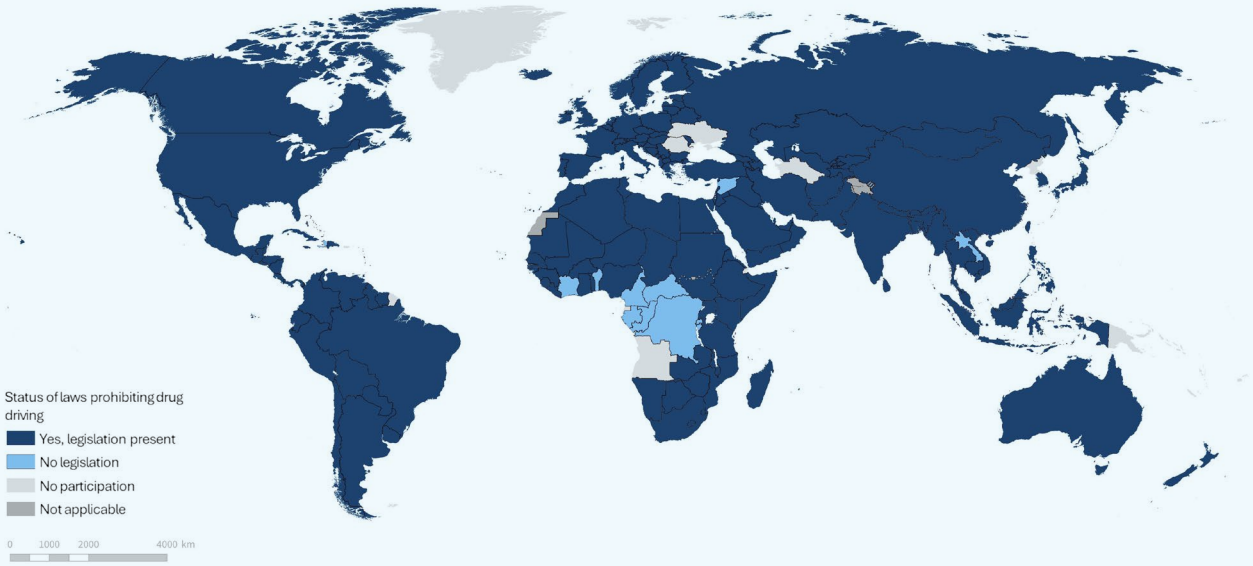
Drug use is an increasingly prevalent problem, leading to impaired driving among adolescents and novice drivers. Strengthening and expanding measures, including legislation on drug driving, are crucial to protecting young lives on the road.

Most countries (dark blue regions) have enacted legislation addressing drug driving. However, there are some conspicuous gaps in West Africa, where such legislation does not exist (Figure 13).



91.4 per cent of countries have drug driving legislation in place.

Figure 13. Legislation on drug driving



Source: Global Status Report on Road Safety 2023, World Health Organization.

Distracted driving

Most countries globally have implemented distracted driving laws, with adolescents being particularly prone to this behaviour.

This includes restrictions on using hand-held mobile phones while driving. Many countries have implemented these laws, but only a few have extended the bans to include hands-free mobile use as well.

Distracted driving laws worldwide

90% of countries have distracted driving laws

21% of these countries ban hands-free use

87% of these countries prohibit handheld mobiles

4.2 Passenger safety

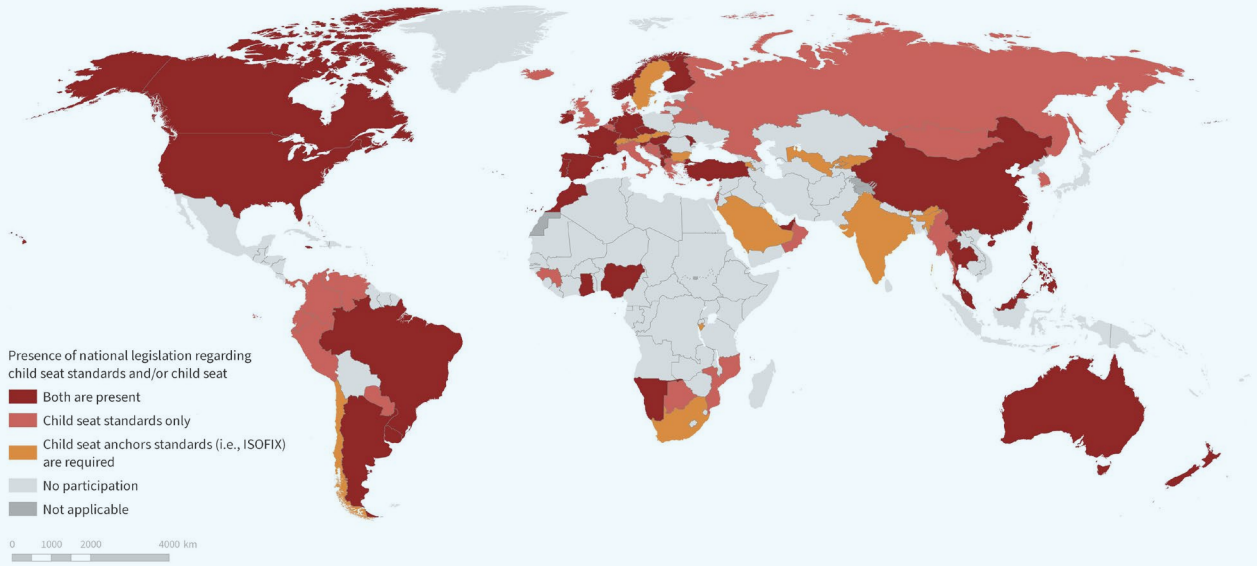
Child restraints and anchors

Child restraint laws are highly effective in increasing the use of car seats, booster seats and seat belts, which significantly reduces the risk of death and injury for children in road traffic crashes. Laws should specify age, height, weight and the need for child seat anchors to be optimally effective.

Only 33 countries have both child seat and child seat anchor legislations in place.

Additionally, children should not be allowed to sit in the front seat of a vehicle due to the higher risk of injury in the event of a collision. Children cannot be adequately restrained with a seat belt, and there is an added risk if the airbag has not been deactivated. Children are generally safer in the back seat, where they are usually further from the point of impact. High-visibility enforcement programmes and educational initiatives are crucial in promoting compliance with these safety laws.

Figure 14. Presence of national legislation regarding protection for child and adolescent vehicle occupants

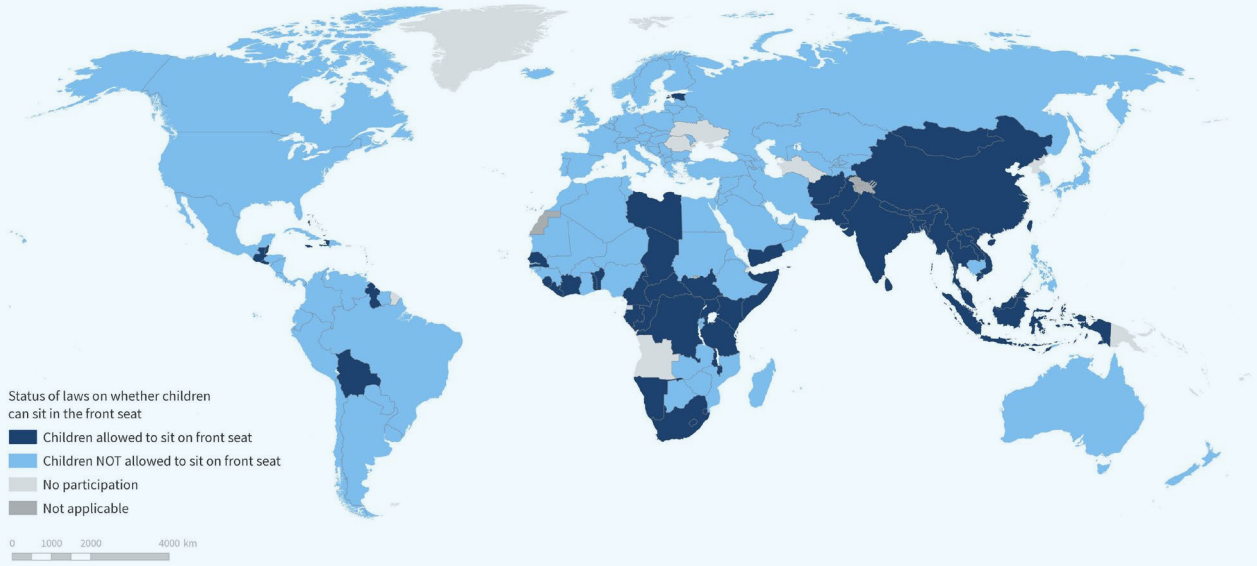


Source: Global Status Report on Road Safety 2023, World Health Organization.

Children in front seats

Figure 14 shows the global status of child seat and child seat anchor legislation. Countries in dark red have both child seat and anchor standards, indicating robust regulations for child safety in vehicles. These are mainly high-income nations in Europe, North America and parts of the Pacific. Countries in light red have legislation covering child seat standards only, suggesting some focus on child safety but lacking anchor system requirements. Countries in orange focus exclusively on child seat anchor standards, which are relatively rare. There is a significant lack of data for these policies across Africa, Southeast Asia and Eastern Europe.

Figure 15. Presence of national legislation forbidding children from sitting in the front seat of vehicles



Source: Global Status Report on Road Safety 2023, World Health Organization.

Figure 15 shows the status on legislation on restrictions to children seated in the front seat. The front seat offers less protection in a crash for children compared to the back seat and the seat belt may not fit properly for the height and weight of a child. Also, the force of an airbag deploying during a crash can cause serious injuries to a child. Countries shaded in light blue have laws prohibiting or regulating children from sitting in the front seat of vehicles. These include most high-income nations across Europe, North America, South America, Australia and parts of Asia, while many countries in South and South East Asia and countries in Africa lack this legislation.

Children as motorcycle passengers

Motorcycles offer limited external protection for drivers and passengers compared to vehicles like cars. The smaller body size of children and adolescents, along with the challenge of finding appropriately sized helmets, has led some countries to ban children and adolescents from being passengers on powered two- or three-wheelers. However, 58 countries have set age or height criteria for children to be allowed as motorcycle passengers.

Motorcycle passenger laws for children and adolescents

58 countries have established age or height regulations for children and adolescents who wish to be passengers on motorcycles, ensuring their safety in this vulnerable role.

Age cut-off regulations
In 25 countries, children must be at least 12 years old to ride as a passenger.

10 countries set a minimum age of 5 years old for motorcycle passengers.

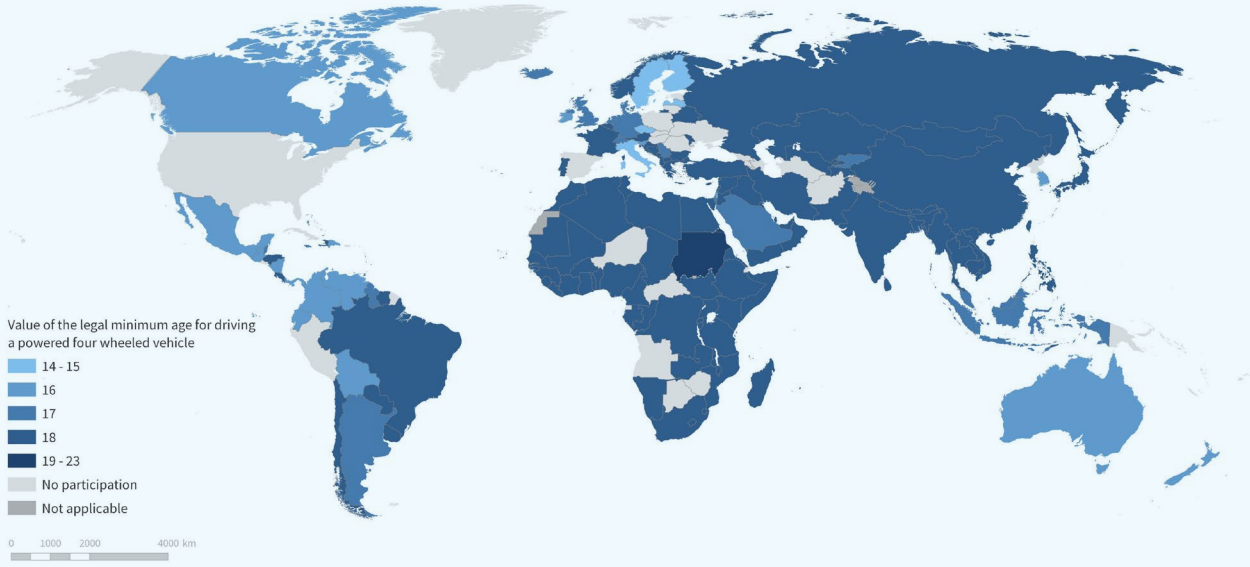
8 countries have established a minimum age of 7 years old as a criterion for children to be allowed as motorcycle passengers.

5 countries children must reach footrest before they can travel as passengers.

Driving age

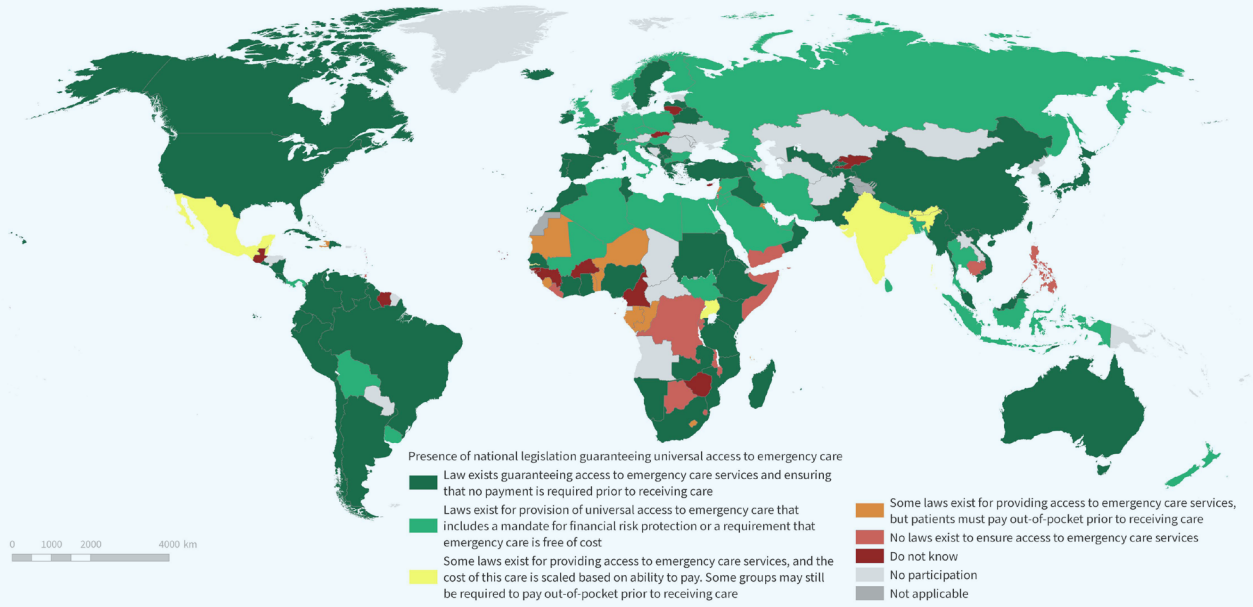
Figure 16 shows the global status of national-level legislation establishing a minimum age for driving a powered four-wheeled vehicle. This is a key at-risk population, as previously mentioned. Most of the world has enacted the recommended 18-year minimum driving age, however, selected high-income countries such as Canada, Australia, New Zealand, Finland and Sweden have younger national age limits. Sudan is conspicuous as having a 23-year minimum age.

Figure 16. Presence of national legislation regarding minimum age for driving a powered four-wheeled vehicle



Source: Global Status Report on Road Safety 2023, World Health Organization.

Figure 17. Presence of national legislation guaranteeing access to emergency care



Source: Global Status Report on Road Safety 2023, World Health Organization.

4.3 Post-crash care

Provision and accessibility of emergency care after a road crash is a key component of treatment. Figure 17 shows global disparities in national laws ensuring universal access to emergency care. Countries in dark green have such laws, mainly in Europe, North America, parts of South America, and some African and Asian regions. In contrast, countries in dark orange and red primarily in Sub-Saharan Africa, the Middle East and South Asia, lack these laws, reflecting significant policy gaps. This map also highlights the unavailability of accurate data (dark red and grey areas) to support child and adolescent road safety, which is another key gap.

Feature 1

Rapid survey of additional injury-related questions from countries

The Global status report on road safety 2023 provided excellent granular data on the status of road safety worldwide in 2021. However, there were some notable gaps in the report's child- and adolescent-specific indicators and data collection. To remedy this, we conducted a short survey with UNICEF country offices to ask some child- and adolescent-specific questions concerning road injuries in each country.

Country officers were contacted by email between October and November 2024. A survey was developed using the REDCap® software, and each participant received the link to access the survey. The survey comprised six pre-tested questions used in South Asia and East Asia and Pacific child and adolescent reports published in 2023/2024. The survey was sent to UNICEF country officers with a follow-up reminder to participants who did not answer the survey after the first week. The survey was open for a month and was answered by 36 participants. In addition, the similar information gathered for the UNICEF Regional Office of South Asia and East Asia and Pacific Regional Office road safety regional reports were combined with these results. A total of 59 countries completed the questionnaire.

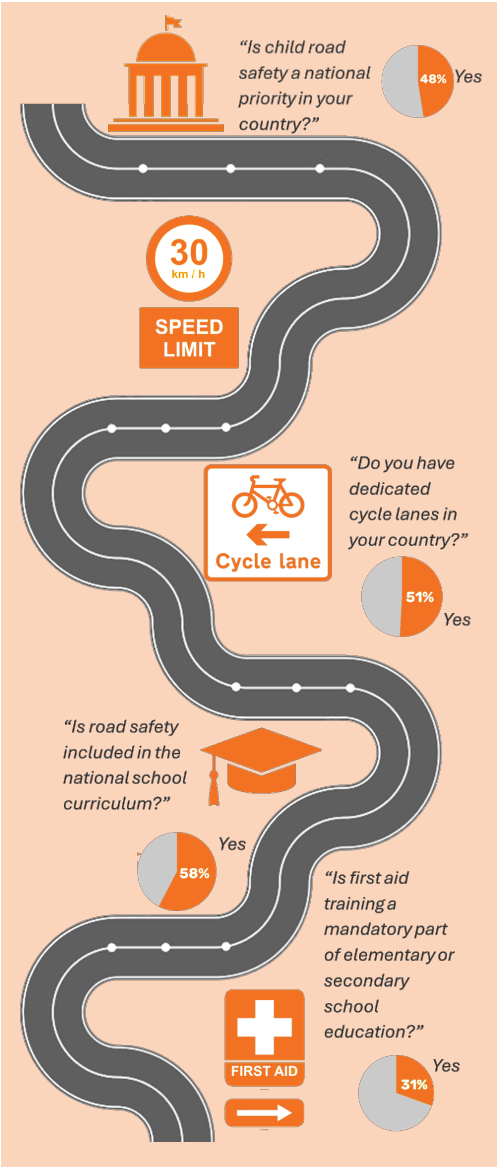
Countries that responded to the additional survey

UNICEF region	Countries (n %)
East Asia and Pacific (EAP)	17 (29%)
Eastern and Southern Africa (ESA)	7 (12%)
Europe and Central Asia (ECA)	14 (24%)
Latin America and Caribbean (LAC)	5 (8%)
Middle East and North Africa (MENA)	2 (3%)
South Asia (SA)	8 (14%)
West and Central Africa (WCA)	6 (10%)
TOTAL	**59 (100%)**

1. Child road safety prioritization

Understanding the level of prioritization given to child road safety is critical. We asked whether child injuries were identified as a national priority, if there was a focal point in government for child safety, and whether dedicated funds existed for addressing child injuries. Responses revealed significant variability, with many countries lacking a unified approach to make child safety a government priority.

Twenty-eight of the 59 countries (48 per cent) indicated that child injuries are a national priority. However, only 13 (less than half) of these countries have a dedicated child injury prevention unit within the government. Most of these units (7 out of the 13) are housed within the Department of Health, but a few were included in the Department of Labour or the Department of Transport.



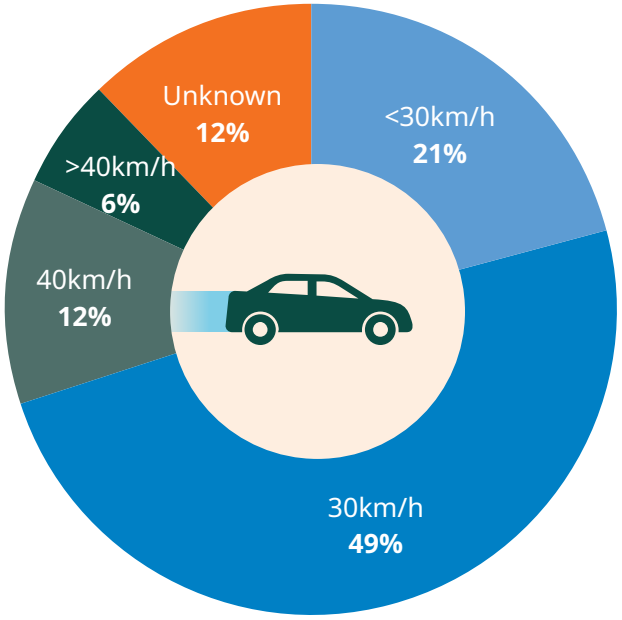
2. Speed limits of 30 km/h around schools

School zones are areas where children are most vulnerable to road traffic injuries, particularly during drop-off and pick-up times. Implementing 30km/h speed limits in these zones significantly reduces the likelihood of collisions and the severity of injuries when road traffic crashes occur.

Studies show that a pedestrian hit at 30km/h has a significantly higher chance of survival than one struck at 50km/h. Lower speed zones also encourage safer behaviour from drivers and improve the overall perception of safety for children and caregivers.

Despite strong evidence supporting their effectiveness, many countries lack specific policies mandating 30km/h speed limits in school zones. Inconsistent implementation creates a patchwork of safety, leaving children in many regions at disproportionate risk. Addressing this gap requires a coordinated effort to prioritize and enforce these limits, particularly in low- and middle-income countries (LMICs), where the burden of road traffic injuries is highest. We asked respondents whether there were existing speed limits specifically around schools.

Speed management around schools (percentage of the 59 countries responding to the additional survey)



Forty-nine of the 59 countries (83 per cent) responded that they did have some speed management around schools, ranging from 10 km/hr through to 60 km/hr. Seventy per cent of the countries had speed limits of 30 km/hr or less.

3. Dedicated bicycle lanes

We also asked whether separate bicycle lanes existed, which is essential for protecting young cyclists. Some countries reported that dedicated lanes were in place on all roads, while others had limited coverage, typically restricted to areas around schools. However, many countries lacked such infrastructure, leaving children vulnerable to collisions.

Thirty of the 59 countries (51 per cent) indicated that there are cycle lanes in their country. However, 100 per cent of respondents said they were only on some roads, not all.

4. Road safety in education

In addition to infrastructure, education plays a vital role in complementing the effect of interventions in preventing road injuries. Our survey asked whether road safety was included in national school curricula. The responses highlighted that while some countries have integrated road safety education into schools, others have not made this a standard practice. Moreover, the inclusion of first aid training in elementary or secondary school curricula remains limited, even though such skills could be lifesaving in emergencies.

Thirty-four of the 59 countries (58 per cent) indicated that road safety is included in the national school curriculum.

Only 18 countries (31 per cent) said first aid is mandatory for elementary or secondary school education.

This section highlighted significant gaps in road safety measures for children and adolescents worldwide. Key deficiencies include inadequate legislation in low- and middle-income countries on critical issues such as child restraint systems, front-seat seating restrictions, impaired driving and minimum age for driving. Many countries lack robust enforcement, and data gaps further hinder targeted interventions. High-income countries tend to have more comprehensive policies, but implementation remains uneven even in these settings. Weaknesses in legislation and enforcement, data availability and collection on child and adolescent road safety and global inequalities are key gaps that must be addressed.

Weaknesses in legislation and enforcement, data availability and collection on child and adolescent road safety and global inequalities are key gaps that need to be addressed.

5 Recommendations

Available data from the *Global status report on road safety 2023* data collection survey show that some significant gaps in road safety policies for children and adolescents remain. In addition, implementation and enforcement of policies are limited in many countries despite enacting appropriate laws that meet global or regional standards of good practice.

This report calls on governments, international organizations and stakeholders to take immediate and decisive action to address the leading cause of death among children and adolescents – road traffic injuries. Drawing from global best practices outlined earlier, the following recommendations provide a framework for embedding, scaling and sustaining evidence-based policies while fostering multi-sectoral collaboration.

1. Strengthen commitment to action

- Establish road safety for children and adolescents as a priority in national health and transport strategies and agendas, ensuring alignment with the Sustainable Development Goals (SDG targets 3.6 and 11.2).

2. Enhance multi-sectoral collaboration

- Line ministries to integrate road safety into health, education, urban planning and transport policies to ensure a comprehensive and cohesive approach.
- Develop multi-stakeholder task forces, including youth representatives, civil society and private sector partners, to drive innovation and accountability.

3. Implement and scale evidence-based policies

- Safer speeds
  - Enact and enforce speed limits of 30 km/h in school zones and other high-risk areas, accompanied by traffic-calming infrastructure.
- Safer vehicles
  - Mandate advanced vehicle safety standards, including pedestrian-friendly designs and technologies like automatic emergency braking.
- Safer road users
  - Lower BAC limits for novice and young drivers to ≤0.02 g/dl, and enforce compliance through routine testing and penalties.
  - Ban children from sitting in the front seat, and ensure the availability and affordability of quality child restraints that meet WHO good practice guidelines.
  - Mandate helmet use for all riders, including children and adolescents, and ensure the availability of helmets that meet relevant safety standards.
- Post-crash care
  - Guarantee universal access to emergency care, with systems equipped to address the unique needs of children and adolescents.
  - Provide first responders with age-appropriate equipment and training.

4. Invest in data and monitoring

- Establish national data collection systems disaggregated by age, gender and road user type to monitor the impact of interventions and guide future actions.
- Incorporate child-specific injury and fatality metrics into existing road safety databases to improve data accuracy and policy relevance.

5. Empower communities and youth

- Engage communities, particularly youth, in co-designing road safety initiatives, leveraging their insights and fostering local ownership.
- Expand educational programmes in schools, focusing on road safety skills and first aid training and move towards mandatory programmes.

Box 6: Strengthening government action on child road safety in Indonesia

In Indonesia, road traffic injuries have emerged as a major threat for children and adolescents. In a country that had more than 31,000 road deaths (85 persons each day) across the entire population in 2021, official statistics show that children account for between 10–15 per cent of all road crash fatalities.

To address this, UNICEF has been working to make mainstream road safety a government priority in the country. Indonesia has a National Plan for Road Safety. However, there was a need to provide guidance for policymakers to improve coordination, synchronization and harmonization of road safety, and create a reference for all government levels to further detail their road safety programmes. The different 'pillars of action' in the National Plan are assigned to different ministries and agencies, which can, however, result in a lack of harmonization of efforts.

In response, UNICEF led government consultation meetings where multiple stakeholders were actively engaged, including the Ministry of Planning (Bappenas), Ministry of Health, National Police, Ministry of Transportation, WHO, Asian Development Bank, World Bank, Indonesia Road Safety Partnership (IRSP), youth representation and Bandung Institute of Technology.

These meetings were critical, to gather data, identify gaps, discuss existing programmes and disseminate regional reports to inform government action.

As a result, key recommendations were developed during the consultations to further design the framework and activities for strengthening road safety for children and adolescents in Indonesia. A policy brief is currently under development which will be released in 2025 to guide government decision-making moving forward.

Relevant to: Safer roads | Safer road users | Post-crash care | Safer speeds | Safer vehicles

Feature 2
The voice of youth

"We want to be the last generation facing road crashes as our number one cause of death."

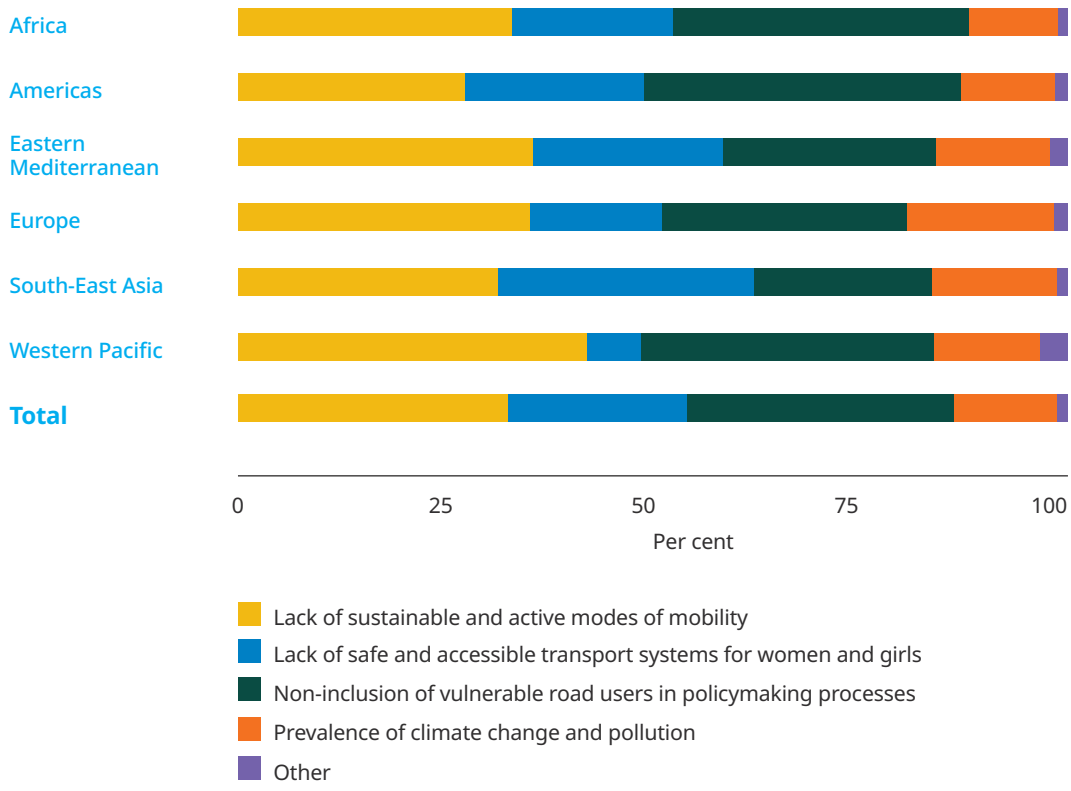
– Global Youth Coalition for Road Safety

To understand the perspectives of young leaders worldwide, more than 800 young people aged 18–35 years were surveyed over one year. The Global Youth Coalition for Road Safety led this global consultation, managed by Youth for Road Safety (YOURS), and with technical support from The George Institute for Global Health and UNICEF.

The youth responses clearly show the connections between road safety and broader development issues, and provide valuable insights to advise policymakers.

- 25 per cent of respondents gave their community the lowest possible safety ratings, citing key issues such as a lack of sustainable and active transport modes (32 per cent) and the exclusion of vulnerable road users from policymaking (32 per cent).
- 22 per cent of youth leaders highlighted the lack of safer and accessible transport systems for women and girls, with the highest concern reported in South-East Asia (31 per cent) followed by the Eastern Mediterranean region (23 per cent).
- 32 per cent cited non-inclusion of vulnerable road users in policymaking processes. This issue was most prominent in the Americas (38 per cent) and Africa (36 per cent).
- 21 per cent of youth leaders agreed that, as decision-makers, they would prioritize promoting adequate, inclusive, and safe road design and infrastructure.
- 15 per cent stated that they would focus on promoting education programmes about road safety and awareness, and engagement campaigns targeting individuals and communities.

Local road safety issues identified by youth leaders participating in the Youth Consultation 2023-2024 survey



Source: Youth Consultation 2023-2024 database. Own estimations.

Unifying these findings, youth developed a 2025 Global Youth Statement for Road Safety, representing nearly 3,000 young leaders from the Global Youth Coalition demanding immediate and bold action to create safer streets that save lives and unlock opportunities. Aligned with the Global Plan for the 2nd Decade of Action on Road Safety, we – the youth of the world – call on governments to prioritize:

- **Multisector collaboration:** Road safety is not an isolated issue – it requires coordinated efforts across health, education, urban planning and transportation. We call on governments to lead by fostering partnerships with NGOs, the private sector and communities to implement evidence-based solutions prioritizing safety, equity and sustainability.

- **Increase SMART* investments:** Governments must commit funding to improve infrastructure, enhance education and strengthen enforcement. This includes robust support for youth-driven initiatives that address local challenges with innovative solutions.
- **Meaningful youth participation:** Young people are key stakeholders in shaping policies that impact their lives. We demand a seat at every decision-making table, ensuring our perspectives and innovative ideas are integral to the design, implementation, and accountability of road safety measures.

Work with us to build a future where safe mobility is a reality for all and road safety is embraced as a core societal value that protects lives, fosters resilient communities, strengthens economies, and secures a brighter future.

> "I fear the daily risks of sharing the dangerous streets with fast-moving vehicles, large trucks and other unsafe road users!"
>
> The Philippines, male, age 22 years

Students in Cameroon participate in post-crash care workshops led by Global Youth Coalition for Road Safety member Stephen as part of YOURS Local Actions programme to spread awareness on helmet use, application of first aid, and risk factors.

* SMART is an acronym for a goal that is Specific, Measurable, Achievable, Relevant, and Time-Bound. These parameters are considered a best practice when goal-setting in order to ensure objectives are attainable within a certain time frame and remain accountable to track progress.

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