

Editorial**Road traffic crashes in Sri Lanka: an epidemic that demands multisectoral public-health mobilization****TLS Samitha Siritunga**

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Introduction

Road traffic crashes (RTCs) represent one of the most significant and preventable injury burdens globally and in Sri Lanka. While the growth of motorised transport brings economic opportunities, the concomitant rise in collisions, fatalities, disabilities and societal cost now demands urgent public health leadership. The time is ripe for the community health and medical community in Sri Lanka to lead a coordinated, multisectoral response to reduce this burden.

Burden of RTCs: global perspective and the Sri Lankan reality

Globally, road traffic injuries rank among the leading causes of death and disability, especially in youth and working-age populations. Every year, around 1.19 million people die each year as a result of RTCs, while 20-50 million more people suffer non-fatal injuries, with many incurring a disability. Injuries due to RTCs are the leading cause of death for children and young adults. Although about 92% of the RTC fatalities occur in low- and middle-income countries, these countries have only around 60% of the world's

vehicle population. Most of the RTC deaths are among vulnerable road users, including pedestrians, cyclists and motorcyclists (1).

In Sri Lanka, historical trends show a steep rise in crash incidence, because of rapid increase of road structure, urbanization, population, increase of motorizations. During last few decades, most of the RTCs were due to motorcycles and three-wheeled taxis, comprising more than 1/3rd of the fatalities. Further, vulnerable road users (pedestrians and bicyclists) accounted for about 70% of fatalities. According to the reports from Sri Lanka Police, the number of RTC deaths has increased up to 3150 until 2019 and gone down to 2363 deaths in 2020 due to restricted movements during COVID-19 pandemic. However, during post-COVID period, a gradual increase in RTC deaths has been noted, with more than 2500 in 2024 (2-3). With regard to morbidity, it has been estimated that more than 150,000 casualties receive treatment as in-patients from state medical care institutions, while most are from highly populated districts such as Colombo, Gampaha and Kurunegala. However, people living in low dense districts such as Kilinochchi and Mullaitivu are also at a higher risk for RTC related injuries (4) (Figure 1).

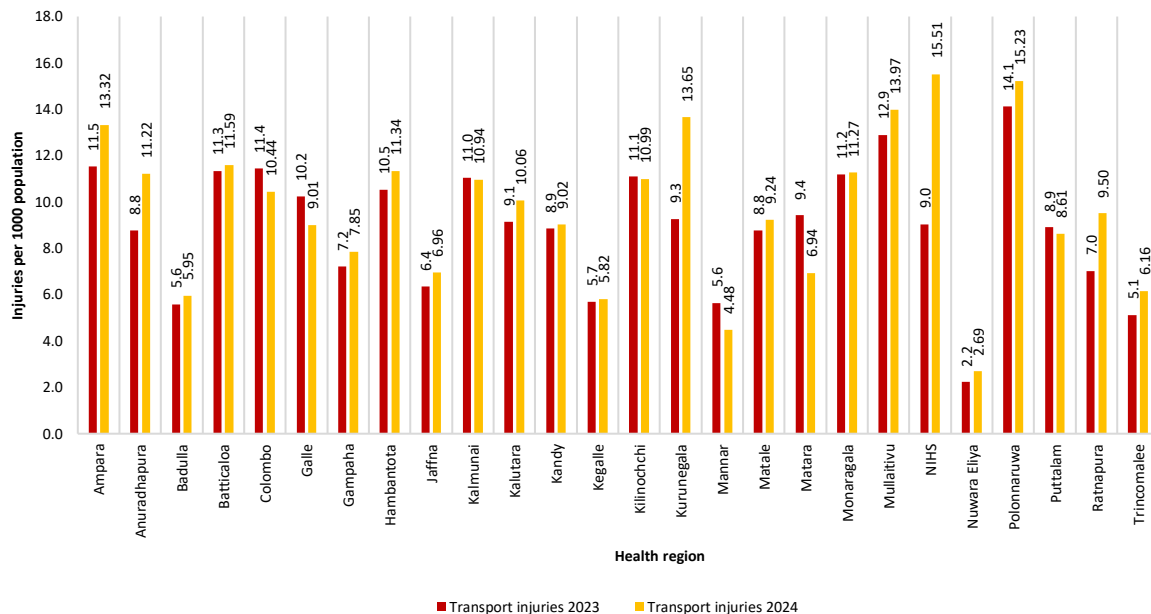


Figure 1: Estimated transport injury burden in Sri Lanka per 1000 population by district in 2023 and 2024

Source: National Injury Surveillance System

Economic and social cost of RTCs

The cost of RTCs goes beyond immediate medical care. It includes health-system cost, prevention cost, productivity losses, years of life lost (YOLL), disability adjusted life years (DALYs) and broader social and economic losses. RTCs place a significant economic burden on individuals and nations through direct costs like medical expenses and property damage, and indirect costs such as lost wages and reduced productivity. This burden can be as high as 3% of a country's GDP, with a substantial portion of the financial strain falling on low-income households and the healthcare system. The world economic burden of road injuries was estimated at US\$1.8 trillion over 2015-2030 (5). According to hospital-based data, the direct treatment cost of RTC victims accounted for over 10% of hospital expenses highlighting the heavy burden on the health system. The economic burden of road crashes in Sri Lanka is estimated at USD 3 billion in 2021, which is 3% of the country's GDP (6). Further, according to the

World Bank, Sri Lanka needs USD 2.0 billion to curb road deaths by half by 2030 as per the United Nations Global Plan and Sustainable Development Goals (SDG) and the estimated cost of road crash fatalities and injuries for countries like Sri Lanka, could be 3-5% of GDP annually (7).

These costs reflect lost productivity especially among economically productive age groups amplifying longer-term development impacts through reduced workforce participation and household income. Further, this reflects the health-system treatment and rehabilitation costs, social care costs, and intangible costs such as pain, suffering, reduced quality of life. The ripple effects extend beyond the injured individual, leading to household financial hardship, long-term disability, increased caregiving responsibilities, and reduced economic potential. These financial losses are disproportionately borne by low-income families further deepening the existing socioeconomic inequities.

Why crashes happen: interacting determinants across the crash continuum

In Sri Lanka, RTCs arise from the complex interplay of multiple factors extending well beyond driver behaviour, despite the widespread public perception that driver negligence is the sole cause of road accidents. Evidence from global road-safety research shows that collisions result from the interaction of multiple determinants, including human behaviour, vehicle characteristics, and the built and systemic environment. Therefore, deficiencies in structural and environmental factors that enable unsafe behaviours, amplify the consequences of human error, or fail to provide adequate protection when crashes occur.

Importantly, the “environment” extends far beyond physical infrastructure. Social, cultural, political, and economic factors influence both individual and institutional decisions that shape road safety. For instance, many vehicle owners postpone routine servicing and maintenance due to high costs, limited availability of spare parts or broader economic constraints, particularly during periods of financial uncertainty. While a vehicle breakdown or poor mechanical performance may appear to be a fault of the vehicle, it is frequently a consequence of these systemic pressures. Similarly, deficiencies in road design or infrastructure often reflect human negligence, inadequate planning or institutional gaps in construction and maintenance, rather than purely natural hazards.

In the Sri Lankan context, these systemic contributors are highly visible. Rapid expansion of road networks has not been matched by parallel investments in safety features. High-density urban areas see mixed traffic streams, where vulnerable road users including pedestrians, cyclists and motorcyclists share space with high-speed vehicles. Aging vehicle fleets with limited safety features further elevate this risk. Moreover, gaps in post-crash response, including delays in emergency medical services, limited first-

aid capacity among bystanders and inadequate trauma and rehabilitation services imply that even survivable crashes can result in permanent disability or death.

Consequences of these interacting factors are striking; even the most attentive and law-abiding road users are at risk in an environment where the design, vehicle safety and institutional systems fail to mitigate predictable hazards. Congested urban roads, poorly maintained rural highways and stretches without pedestrian protections create situations where human error, fatigue or momentary lapses can lead to catastrophic outcomes. Understanding RTCs as the product of interacting determinants allows a necessary shift from a culture of blame toward a culture of prevention, emphasising that safer behaviour, vehicles and road environments must all function synergistically to reduce crashes, injuries and fatalities.

Preventive measures aligned with Global Road Safety Pillars

The United Nations General Assembly has set an ambitious target aligned with SDG target 3.6 of halving the global deaths and injuries from RTC by 2030. In addition, SDG target 11.2 aims to ensure access to safe, affordable, accessible and sustainable transport for all by 2030 (8).

The Global Plan for the Decade of Action on Road Safety outlines a comprehensive strategy to prevent road traffic crashes, structured around five interrelated pillars (Figure 2) (9). This plan emphasises the safe system approach, which acknowledges that human error is inevitable and focuses on designing the entire road transport system including roads, vehicles, speeds and post-crash care to prevent crashes and reduce the severity of injuries. By integrating these elements, it ensures that even when mistakes occur, the system protects all road users and minimises fatalities and serious injuries.



Figure 2: Five pillars of Global Plan for the Decade of Action on Road Safety

Source: <https://visionzeronetwork.org/united-nations-launches-new-initiative-to-reduce-road-crashes/>

These pillars provide a framework for coordinated action and align closely with Multi-Sectoral Strategic Action Plan on Injury Prevention and Management, Sri Lanka 2021 – 2025 (MSAP) (9).

- Pillar 1: Road safety management**
This pillar focuses on strong leadership, coordinated institutions and clear policy direction. Sri Lanka has taken steps through bodies such as the National Council for Road Safety and multisectoral collaboration across transport, health, police, insurance and local authorities, although further strengthening is still required.
- Pillar 2: Safer roads and mobility**
Engineering and planning solutions remain central to protecting road users. Sri Lanka continues to upgrade roadways, signage, lighting, school zones and pedestrian facilities, supported by road-safety audits, though implementation is challenged by resource limitations and maintenance issues.
- Pillar 3: Safer vehicles**
This pillar promotes stronger vehicle standards and roadworthiness. Sri Lanka's fitness inspections, regulatory discussions and efforts to manage commercial-fleet risks reflect progress, but economic constraints continue to hinder regular maintenance and compliance.

- Pillar 4: Safer road users**
Improving user behaviour through education and enforcement is essential. Sri Lanka maintains traffic-law enforcement and runs targeted awareness initiatives with new enforcement improvements. However, consistency varies across regions.
- Pillar 5: Post-crash response**
Effective emergency care and rehabilitation are vital to reducing deaths and disability. Sri Lanka has expanded *Suwa Seriya*, strengthened prehospital care and trauma services, and invested more in rehabilitation advancing its post-crash care capacity.

These efforts collectively mirror the Global Plan's five pillars, while the MSAP 2021–2025 provides a comprehensive national framework that guides and reinforces these activities, supporting a more coordinated and sustained response to the country's road-safety challenges.

Challenges for prevention

Although Sri Lanka has a well-defined framework for preventing RTCs, effective implementation is hindered by key contributing factors:

- Human factors:** Risky practices such as speeding, distracted driving, impaired driving and poor compliance with helmet and seatbelt laws persist

despite legal requirements. These behaviours are reinforced by cultural norms that tolerate risk-taking and by limited safe options for walking and cycling. Economic pressures, fatigue from multiple jobs and stress associated with financial instability further impair concentration and decision-making while on the road.

- *Vehicular factors:* Vehicle-related risks in Sri Lanka are shaped by both individual and systemic economic constraints. A substantial share of the national vehicle fleet comprises inherently high-risk modes most notably motorcycles and three-wheeled taxis together with older and structurally less crashworthy vehicles that frequently lack fundamental safety features required for adequate occupant and road-user protection. High servicing costs, limited availability of spare parts and deferred maintenance particularly during periods of economic downturn increase the likelihood of mechanical failures. Overloading of commercial vehicles remains common due to inadequate enforcement and financial pressures on operators. Additionally, much of the passenger transport bus fleet consists of vehicles not originally designed for passenger carriage, worsening the risk for those relying on public transport.
- *Infrastructure and environmental factors:* Hazards linked to road design and the broader environment continue to contribute to crashes. Expansion of the road network has often proceeded without parallel safety upgrades, leaving many stretches without adequate lighting, pedestrian facilities or protective barriers. Resource limitations, delayed maintenance and competing development priorities further impede the implementation of necessary safety improvements.
- *Data management factors:* Weak coordination among agencies responsible for crash data, including police, health services and transport authorities, limits the ability to identify high-risk locations, evaluate interventions and inform policy. Persistent under-reporting of crashes and

injuries constrains accurate burden estimation and hinders effective resource allocation.

- *Prehospital and post-crash care factors:* Delays in first aid, inconsistent bystander response, limited ambulance coverage, and constrained trauma and rehabilitation services often convert survivable injuries into fatalities or disabilities. Logistical and resource challenges restrict the expansion of emergency medical services (EMS), particularly in rural and underserved areas.
- *Social and economic factors:* RTCs impose substantial socioeconomic burdens, particularly because victims are mostly from the economically productive age group. Injuries frequently result in loss of income, reduced productivity and financial strain for affected households. Increased caregiving responsibilities, medical costs and loss of livelihood exacerbate vulnerability, especially during economic hardships.
- *Financial factors:* Limited financial resources remain a major barrier to scaling and sustaining comprehensive road-safety interventions. Despite strong economic justification for investment, fiscal constraints and competing national priorities hinder adequate funding for prevention, enforcement, infrastructure improvements and post-crash care.

Conclusions & Recommendations

RTCs in Sri Lanka are not inevitable. They are preventable, and failure to do so has severe human, social, and economic consequences. Recognizing the complexity of the interaction of factors that lead to RTC is essential for a proactive, prevention-focused approach. A public-health approach, grounded in the Haddon matrix and aligned with the WHO five-pillar framework, offers a pragmatic roadmap. To accelerate the progress, the following actions are recommended:

- *Strengthen governance and coordination:* Enhance leadership and multisectoral collaboration through bodies such as the National

Council for Road Safety, with clear accountability, strategic oversight, and integration across health, transport, police, local authorities, and other stakeholders.

- *Scale up behavioural interventions:* Expand law enforcement efforts, targeted public education, and community awareness programmes to improve compliance with traffic laws, helmet/seatbelt use, and safe driving practices.
- *Prioritise infrastructure and vehicle safety:* Target high-risk corridors, school zones, and pedestrian facilities, while enforcing vehicle import and fitness standards, promoting roadworthiness and safer vehicle design, and ensuring strict compliance with helmet, seatbelt, and child-restraint use.
- *Enhance post-crash systems:* Strengthen prehospital care, emergency medical service coverage, trauma care, rehabilitation, and palliative care, while building community capacity for first aid and early intervention.
- *Strengthen monitoring and evaluation:* Establish a unified, multisectoral data system to monitor data across sectors, with key indicators (crash rate, fatality rate, serious injury rate, DALYs lost, cost of RTCs) published annually
- *Ensure sustainable investment:* Mobilise financial resources to support prevention, enforcement, and post-crash services, recognising the economic burden of RTCs and potential cost savings from reduced injuries and fatalities

By adopting a systems-oriented, evidence-based approach, Sri Lanka can reduce road traffic deaths and injuries, alleviate the social and economic burden, and create safer mobility for all road users. In this context, the medical and public health community of Sri Lanka have a critical role in providing leadership, advocacy, research, capacity-building, community mobilisation and monitoring progress.

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