



## **Concept note: Rapid assessment of road traffic injuries related policies and their economic impact in Sri Lanka**

### **Background**

Road traffic injuries (RTIs) represent an increasing human and socio-economic problem worldwide and have been identified as one of the target areas under the Sustainable Development Goals (SDGs) to “halve the number of global deaths and injuries from road traffic accidents” (SDG 3.6)<sup>1</sup>. In Sri Lanka, road traffic injuries represent one of the SDG targets that are falling behind. The mortality rate due to road traffic injuries increased from 13.9 in 2015 to 19.7 per 100,000 population in 2019, according to the latest World Bank’s Development Indicators data<sup>2</sup>. Moreover, while road traffic accidents may account for vehicle material damages through insurance, human suffering, and injuries are likely to be handled by emergency health services, which may or may not be supported directly through insurance mechanisms. The World Bank estimates that road crash fatalities and injuries could cost Sri Lanka between 3-5% of GDP annually. It subsequently exerts significant implications on healthcare financing and the overall economy.

In September 2020, the UN General Assembly adopted [resolution A/RES/74/299](#) "Improving global road safety", proclaiming the Decade of Action for Road Safety 2021-2030, with the ambitious target of preventing at least 50% of road traffic deaths and injuries by 2030. The Global Plan for the Decade of Action was released in October 2021 to support achieving the above objective. The Plan recommends host of measures to improve safe road infrastructure, vehicle safety, as well as safe road use and post-crash response, calling on improvements in laws and enforcement and providing timely life-saving emergency care for the injured.

To accelerate the above actions in Sri Lanka, there is a need to better understand the current status of road safety and post-crash response in Sri Lanka, to identify gaps and consider appropriate interventions for addressing these for progressing towards achieving the SDG target 3.6.

Additionally, road traffic accidents incur material damages to the vehicles through insurance (private and public); however, human suffering and injuries are likely handled by emergency health services, incurring a significant burden on health services and costs to the health system. It would be important to understand how these services are being supplemented in Sri Lanka, especially when the government faces economic challenges. Also, it would be important to understand the implications of existing vehicle insurance policies and find options to consider their potential contribution to compensate for health costs incurred due to road traffic injuries.

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<sup>1</sup> [https://www.who.int/data/gho/data/indicators/indicator-details/GHO/estimated-road-traffic-death-rate-\(per-100-000-population\)](https://www.who.int/data/gho/data/indicators/indicator-details/GHO/estimated-road-traffic-death-rate-(per-100-000-population))

<sup>2</sup> World Bank Databank for Development Indicators



## Objectives

The overall objective of this study consists of two phases. In this concept note, given the study period, we only focus on phase 1.

The objectives of the proposed work are to:

Phase 1:

- Conduct a rapid review of determinants and the trends of road traffic injuries (RTIs) in Sri Lanka.
- Understand vehicle insurance regulations, review data and policies on casualty care and emergency service provision-related reimbursements;
- Draw upon Thailand and other countries experiences in improving service delivery to impact post-trauma care and lessons/best practices for Sri Lanka.

Phase 2:

- Assess health care costs of RTI management by emergency services in Sri Lanka
- Identify the policy options and projecting their health and economic impact; and
- Consult stakeholders to verify findings and fine-tune recommendations on the potential of reviewing insurance policy/ premium payment regulations for their contribution to health financing.

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## Methods

The study will employ the following methods:

### 1. Review of relevant literature on RTIs

The literature review will be conducted through a desk-based search of various databases and sources. To ensure a comprehensive search, key databases such as PubMed, Scopus, and Google Scholar were queried using relevant keywords and phrases such as "road traffic accidents," "traffic collisions," "injury prevention," and "post-trauma care." Additionally, transportation-related journals and reports from government agencies, non-governmental organizations (NGOs), and international bodies were included in the review process. Sri Lanka's government reports, or grey literature, will also be explored to understand the current policy and regulations in the country.

It is expected to understand the situation of road traffic injury globally. Causes and risk factors contributing to road traffic injuries in other countries where data is available will be identified, as



well as relevant road safety measures and interventions implemented to address determinants of road traffic injuries. These might include public awareness campaigns, traffic law enforcement, drink-drive laws, road improvements, and vehicle safety regulations which led to the effective implementation of these measures. More specific references will be highlighted visa’ vis specific situation in Sri Lanka. While there is recognition of the importance of post-trauma care, the quality and accessibility of medical care and rehabilitation services for road traffic injury victims and the current emergency response systems will also be explored to assess the feasibility of the policy options.

## 2. Engaging with WHO identified local consultant to refine the scope of the study

To ensure that the scope of work is underpinned to the specific context of Sri Lanka and is based on actual datasets and information available. A local consultant having expertise in the field will be engaged through the WHO country office support to identify relevant documents, retrieve required datasets from relevant departments and officials in Sri Lanka.

## 3. Identify stakeholders to be engaged in the consultative process with the support of WHO designated local consultant.

This study will identify the relevant stakeholders through a stakeholder mapping exercise and engage with various stakeholders with the support of the local consultant from multidisciplinary backgrounds to consult on the scope of the study and identify the relevant dataset for the data analysis.. Preliminary suggestions of potential stakeholders are outlined in Table 1.

Table 1 List of potential stakeholders for road traffic injuries study

NO.	Stakeholders	Examples
1	<b>Government Agencies</b>	The Ministry of Transport and Civil Aviation, the Ministry of Health, and the Ministry of Interior are essential stakeholders in road safety policy, regulation, and enforcement. Engaging with these agencies can help understand existing road safety measures, access relevant data, and gain support for implementing interventions.
2	<b>Law Enforcement Agencies</b>	Police and traffic authorities are vital stakeholders in ensuring traffic laws and regulations compliance. Collaborating with law enforcement can facilitate the enforcement of road safety measures and help in data collection related to accidents and traffic violations.
3	<b>Healthcare Providers</b>	Ministry of Health, hospitals, emergency medical services, and trauma care facilities are crucial stakeholders, especially regarding post-trauma care for road traffic injury victims.
4	<b>Transportation Authorities</b>	Transportation agencies are responsible for planning and maintaining road infrastructure.
5	<b>Non-Governmental</b>	NGOs working on road safety, public health, and injury prevention are essential stakeholders. This group often has on-



	<b>Organizations (NGOs)</b>	the-ground experience, community engagement, and advocacy capabilities that can complement government efforts.
6	<b>Insurance Companies</b>	Insurance providers have a vested interest in road safety and can offer insights into risk assessments and accident data. Engaging with insurance companies can help create incentives for safer driving practices.
7	<b>Media and Communication Channels</b>	Media organizations can be critical in raising awareness about road safety through public service announcements, news coverage, and education campaigns.
8	<b>Vehicle Manufacturers</b>	Collaborating with automobile manufacturers can lead to improved vehicle safety features and technology, contributing to injury prevention
9	<b>Road Users and Communities</b>	Road users, including drivers, pedestrians, cyclists, and local communities.
10	<b>International Organizations</b>	World Health Organization (WHO) or others who often provide resources, data, and guidelines on road safety. Engaging with them can ensure alignment with global best practices and access to relevant information.

4. Developing a report based on analyses of data available on RTIs in Sri Lanka, in line with the stated objectives.

This study will rely on the data analysis of the existing databases in Sri Lanka to determine the trends in mortality and casualty of road traffic accidents in Sri Lanka. The analysis of data available on RTIs in Sri Lanka includes three parts:

4.1. Data

1) Accident data:

Table 2 Example of data variable for data analysis

<b>Variables</b>	<b>Items</b>
Outcomes variables	Number of accidents per accident type Fatal Non-fatal 1. Major 2. Minor 3. Damage only
Exposures Time	Year or Time of day
Driver information	Age Gender Race or Ethnicity Education level



	Occupation or Employment status Household income Medical insurance Vehicle insurance status Average driving hours per work
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2) Hospitalisation data:

- Utilisation of emergency services; it would be helpful to have data on the vehicle type, victim, severity of the accident, and cost associated with the services.
- Accidence time: year or time of day

3) Health insurance data:

- Claims for RTIs or existing insurance policies in Sri Lanka.

However, it is noteworthy to identify further relevant data variables based on the data availability and accessibility with local consultant in Sri Lanka.

#### 4.2. Statistical analysis method

- 1) The category variables, such as accidents, will be described using numbers and percentages (N, %). Meanwhile, continuous variables, such as age and year, will be described using mean and standard deviation (SD).
- 2) Pearson's Chi-squared test or Kruskal-Wallis rank sum test will be used to compare the percentage or mean of characteristics and outcomes of participants, respectively. A p-value < 0.05 will be required for significance.
- 3) Data will be visualised on the longitudinal values of accident and time. Using the primary outcome (number of accidents) as the y-axis and the year (time) of the accident as the x-axis to show the trend of accidents.

#### 4.3. Data management.

Depending on the available data, a CSV file format will be used to enhance data management for large datasets. For large datasets (especially when dealing with datasets exceeding 6 GB), a supercomputer may be considered for efficient data management. The current data protection regulation might need to be explored in the context of Sri Lanka for appropriate information handling.

#### 5. Stakeholder meeting to disseminate findings and receive feedback

Once the data analysis findings become available, the research team will draw key lessons learned and consult with stakeholders to disseminate the study findings and receive feedback before formulating a policy recommendation for the Sri Lanka government.



## Place of study

It is proposed that at least one visit is conducted by the team from Thailand to Sri Lanka to work with colleagues on data analysis and to consult relevant stakeholders. Other meetings may be held online between the Thai team and counterparts in Sri Lanka.

## Expected outputs

During this period, the main output is a summary of an analysis of available data on RTIs in Sri Lanka, lessons learned from Thailand, and potential policy options. Summaries of meetings with stakeholders and document synthesis will also be provided as part of the study outputs.

A major risk to completing the task is data accessibility and data availability for the Thai team. Should there be delays in access to the data, the research team will draw on other evidence available in the country.

## Timeline, activities, and deliverables

This study is expected to be conducted between 10 October through 31 December 2023.

Activities	Deliverables/Milestone	Timeframe (months)				
		Aug	Sep	Oct	Nov	Dec
Concept note development and finalization, identify team and experts in coordination with the WHO-designated local consultant	<ul style="list-style-type: none"> <li>- Concept note</li> <li>- Formation of team</li> </ul>					
Application for ethical clearance	<ul style="list-style-type: none"> <li>- Received ethical clearance or exempted.</li> </ul>					
Desk-based review	<ul style="list-style-type: none"> <li>- Summary of findings</li> </ul>					
Stakeholder consultation	<ul style="list-style-type: none"> <li>- Identify relevant stakeholders (stakeholder mapping)</li> </ul>					



Activities	Deliverables/Milestone	Timeframe (months)				
		Aug	Sep	Oct	Nov	Dec
	<ul style="list-style-type: none"> <li>- Stakeholder consultation meeting completed,</li> <li>- Defined the scope of the study,</li> <li>- Identified data required for analysis</li> </ul>					
Data collection	<ul style="list-style-type: none"> <li>- Acquired dataset from the local settings</li> </ul>					
Data analysis	<ul style="list-style-type: none"> <li>- Completion of data analysis on RTIs in Sri Lanka</li> </ul>					
Stakeholder consultation and dissemination of results	<ul style="list-style-type: none"> <li>- Stakeholder consultation meeting completed,</li> <li>- Meeting summary and report completed.</li> </ul>					
Study publication	<ul style="list-style-type: none"> <li>- Document synthesis</li> </ul>					

### Project team

This study project was commissioned by the WHO country office Sri Lanka and will be led by the Health Intervention and Technology Assessment Program (HITAP), Ministry of Public Health, Thailand. It is planned to have two senior experts in road traffic injury and prevention from Thailand, one senior researcher, one manager, three project associates, and one coordinator.

No	Name	Position	Organization	Role and responsibilities
1	Dr.Anuchar Sethasathien	Advisor	Thailand Road Safety Directing Center Committee Thailand Fund for Road Safety Committee Thai Health foundation WHO(SEARO) Road Traffic Injury Prevention	Study conceptualization Finalize/ review methodology Develop and review synthesis report, finalize conclusions and recommendations
2	Dr.Witaya Chadbunchachai	Advisor	Trauma & Critical Care Center	-Provide overview guidance on the study conceptualisation and recommendations on policy relevance.



No	Name	Position	Organization	Role and responsibilities
			WHO Collaborating Center on Injury Prevention & Safety Promotion, Khon Kaen Hospital	
3	Dr. Ratrawee Pattanarattanamolee	Advisor	WHO Collaborating Center for Injury Prevention and Safety Promotion, Khon Kaen Hospital	Study conceptualisation Finalize/ review methodology. develop/ review synthesis report, finalize conclusions and recommendations.
4	Miss Saudamini Dabak	Manager	Health Intervention and Technology Assessment Program (HITAP)	Oversee the project, budget management.
5	Miss Kanchanok Sirison	Project Associate		Study conceptualisation, develop concept note and methodology, conduct literature reviews, conduct data analyses, compile, and review results, arrange stakeholder meetings, draft manuscript, conclusions, and recommendations.
6	Miss Sichen Liu	Project Associate		
7	Miss Aye Nandar Myint La Chimee	Project Associate		
8	Miss Kanokwan Kammong	Coordinator		Overall coordination of the project work, develop and follow-up on deliverables and timelines, coordinate with research team for timely information and data sharing, coordinating with WHO for administrative and financial reporting.

The team from Thailand will work closely with counterparts in the WHO Country Office and WHO designated consultant in Colombo, Sri Lanka, who will also be part of the research team to facilitate the project activities in Sri Lanka.

### Budget

Budgetary resources will be needed for the time of project advisors and team members, arranging a country visit for data collection, stakeholder consultation meetings, as well as other related operational expenses for completing the work. Additional fees may be applied for publication fees.