INDIA CHAPTER

IRF INTERNATIONAL ROAD FEDERATION

Global Road Infratech Summit & Expo

05-06 FEBRUARY 2026

GRIS GLOBAL ROAD INFRATECH SUMMIT & EXPO 2026

" Vision Zero India : Integrating Safety, Sustainability and Technology in Infra"

PPP-Driven Innovation in Road User Safety: Transitioning from Fatal Roads to Forgiving Roads via Empathy-Driven Design-Build-Road-Safety, (E-DBRS) HAM Model

- Evolving from a reactive accident-management model to a preventive, empathy-focused framework.

AUTHORS - PRESENTERS:
(TAMIL NADU HIGHWAYS DEPERTMENT)

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CONTEXT OF THE PRESENTATION

Global Road Safety: A Growing Public Health Crisis	**(3-8 slides)**
Road Safety in India: Scale, Trends, and Patterns	**(9-29 slides)**
Strengthening Road Safety: Ongoing Government Initiatives	**(30-33 slides)**
Road Traffic Injuries as a Public Health Challenge	**(34- 41 slides)**
India's Position in Global Indices	**(42-43 slides)**
Financing Road Safety: Policy and Budget Considerations(MORTH)	**(44th Slide)**
Present-Day Challenges	**(45 – 57 slides)**
Supreme Court Directions on Road safety	(58-60slides)
Are we on the Right Path?	(61-63 slides)
Key Bottlenecks in Achieving Zero Road Fatalities	**(64 – 70 slides)**
Empathy in Road Safety: Designing for Real Users	**(71 -82 slides)**
E-DBRS-HAM: A PPP Model for Life-Saving Roads	**(75-98 slides)**

ROAD SAFETY?

Road safety is not just about traffic rules

- **Every accident is not fate; most are caused by carelessness, speed, and ignorance.**
- **Roads should connect destinations, not end lives and destroy families.**
- **True discipline on the road reflects respect for life and responsibility to society.**

ROAD USER SAFETY?

Road user safety focuses on the safety of the people using the road.

1. **Drivers**
2. **Pedestrians**
3. **Cyclists**
4. **Passengers**

Road safety means saving lives before accidents happen.

Why Road Safety Worldwide? (Road Safety Decade & SDGs)

DECADE OF ACTION FOR ROAD SAFETY 2021 - 2030

SUSTAINABLE DEVELOPMENT GOALS

Why Road Safety ?

- **Globally, road traffic injuries (RTIs) are the eighth leading Cause of death**
- **With 1% of World's Vehicles, India accounts for 11% of Global deaths in Road Accidents : World Bank report (2021)**
- **Frequency of crashes: India records about 53 road accidents every hour, with one death occurring every four minutes.**

India continues to top road accidents fatalities globally, with over 1.72 lakh deaths in road crashes in 2023

55 crashes and 20 fatalities every hour in 2023; Crashes up 4.2%, fatalities increased over 2.6% compared to 2022

The Indian EXPRESS
JOURNALISM OF COURAGE

New Delhi | Updated: December 2, 2024 08:35 AM IST

KEY FINDINGS FROM THE WORLD BANK REPORT

Annual impact in India:	**Around 4.5 lakh (450,000) road accidents occur every year, leading to approximately 1.5 lakh (150,000) deaths.**
Frequency of crashes:	**India records about 53 road accidents every hour, with one death occurring every four minutes.**
Decade-long toll:	**Over the last 10 years, road crashes have killed about 13 lakh (1.3 million) people and injured over 50 lakh (5 million).**
Economic cost:	**Road accidents are estimated to cost India 3–7% of its GDP annually, due to healthcare expenses, productivity loss, and infrastructure damage.**
Social impact:	**The burden disproportionately affects poor and vulnerable households, often pushing families into financial distress due to medical costs and loss of income.**

Why India's road fatality rate is so high?

The report and experts cite multiple contributing factors:

1. **Speeding and reckless driving**
2. **Poor road design and infrastructure**
3. **Low compliance with helmet and seatbelt laws**
4. **Overloaded vehicles and weak enforcement**
5. **Slow emergency response and trauma care**
6. **High exposure of vulnerable road users (two-wheelers, pedestrians, cyclists)**

WHAT EXPERTS RECOMMEND

WORLD BANK GOES BEYOND ADVICE

ROAD SAFETY & ACCIDENT OVERVIEW IN INDIA – 2023 (MORTH REPORT)

Key National Figures (2023)

Total Accidents:	Fatalities:	Injuries:	Fatal Accident Victims in Productive Age (18–45 years):
4,80,583	1,72,890	4,62,825	66.4%

ROAD SAFETY & ACCIDENT OVERVIEW IN INDIA – 2023 (MORTH REPORT)

Key National Figures (2023)

Road Type	Accidents	Fatalities	Fatal Accidents
National Highways	1,50,177 (31.2%)	63,112 (36.5%)	57,467 (35.8%)
State Highways	1,05,622 (22.0%)	39,439 (22.8%)	36,595 (22.8%)
Other Roads	2,24,744 (46.8%)	70,339 (40.7%)	66,447 (41.4%)

Leading States & Cities

Accidents:
Tamil Nadu tops among States.

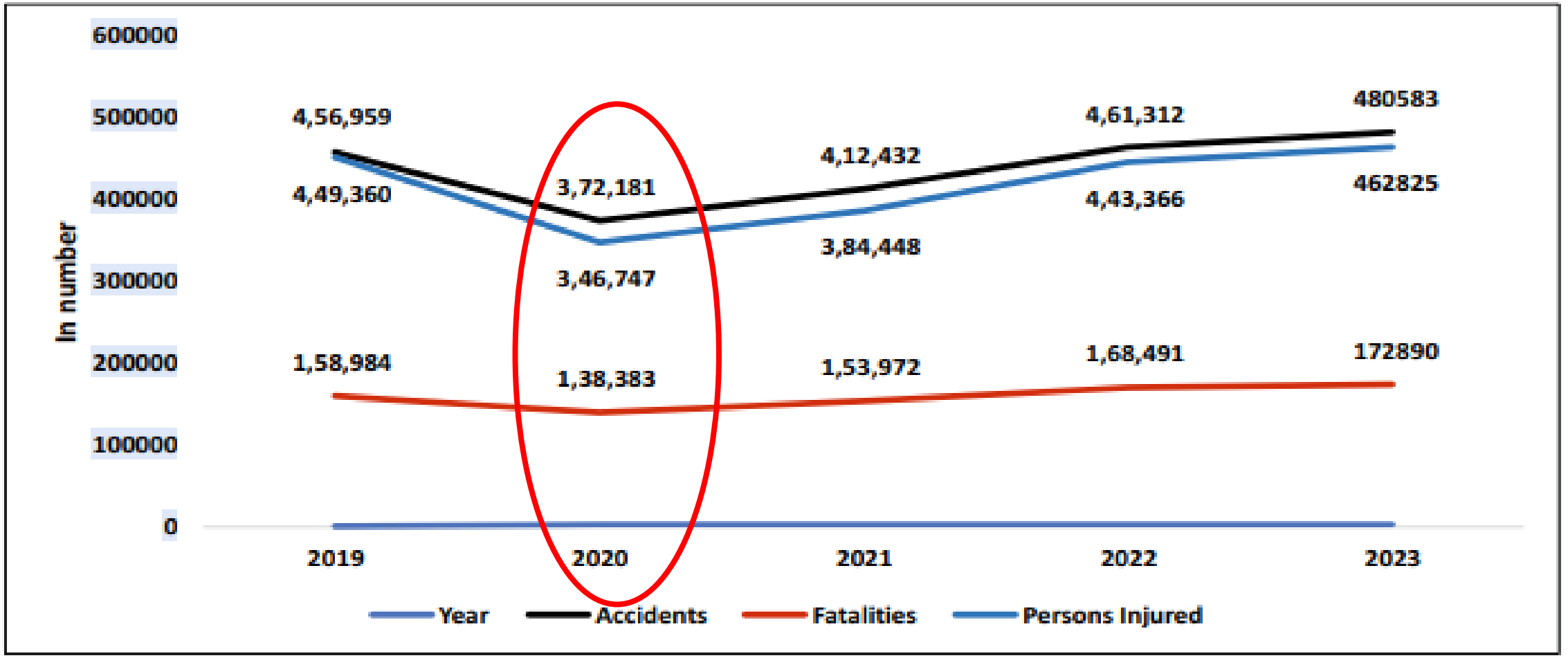
Fatalities:
Highest in Uttar Pradesh.

Million Plus Cities contributed 16.9% of accidents and 10% of fatalities.

Rural Accidents: 68.5% of deaths occurred in rural areas.

ROAD SAFETY & ACCIDENT OVERVIEW IN INDIA – 2023 (MORTH REPORT)

Trends in number of Accidents, Fatalities and Persons Injured: 2019 to 2023



ROAD SAFETY & ACCIDENT OVERVIEW IN INDIA – 2023 (MORTH REPORT)

Inference on the Major Causes of Accidents

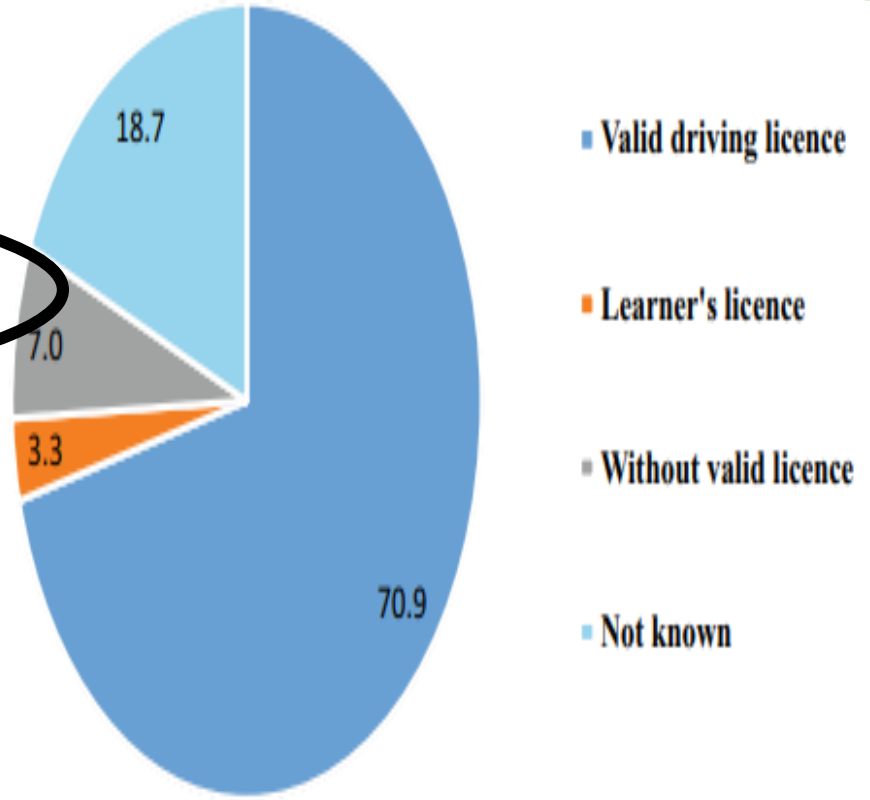
HUMAN ERROR	ROAD ENVIRONMENT
• Traffic Rule Violation • Driving Without a Valid License • Non-Use of Safety Devices	• accidents happening in a particular geographical area (residential, institutional, market/commercial area, etc.) • those related to the type of road features including straight, curved, steep, etc., • type of junction • type of traffic control, • weather condition, etc.

HUMAN ERROR _ACCIDENTS -TRAFFIC RULE VIOLATION

Category	2022			2023			% Change in 2023 over 2022		
	Accidents	Fatalities	Injured	Accidents	Fatalities	Injured	Accidents	Fatalities	Injured
Over-speeding	3,33,323	1,19,904	3,22,795	3,28,727	1,17,682	3,20,416	-1.38	-1.85	-0.74
% share of total	72.26	71.16	72.81	68.4	68.07	69.23			
Drunken driving/consumption of alcohol & drug	10,080	4,201	8,809	9,143	3,674	8,421	-9.3	-12.54	-4.4
% share of total	2.19	2.49	1.99	1.9	2.13	1.82			
Driving on wrong side/Lane indiscipline	22,586	9,094	21,745	25,242	9,432	24,435	11.76	3.72	12.37
% share of total	4.9	5.4	4.9	5.25	5.46	5.28			
Jumping red light	4,021	1,462	3,450	2,440	818	2,157	-39.32	-44.05	-37.48
% share of total	0.87	0.87	0.78	0.51	0.47	0.47			
Use of mobile phone	7,558	3,395	6,255	7,122	2,884	6,445	-5.77	-15.05	3.04
% share of total	1.64	2.01	1.41	1.48	1.67	1.39			
Others	83,744	30,435	80,312	1,07,909	38,400	1,00,951	28.86	26.17	25.7
% share of total	18.15	18.06	18.11	22.45	22.21	21.81			
All India	4,61,312	1,68,491	4,43,366	4,80,583	1,72,890	4,62,825	4.18	2.61	4.39

ACCIDENTS –LICENSE

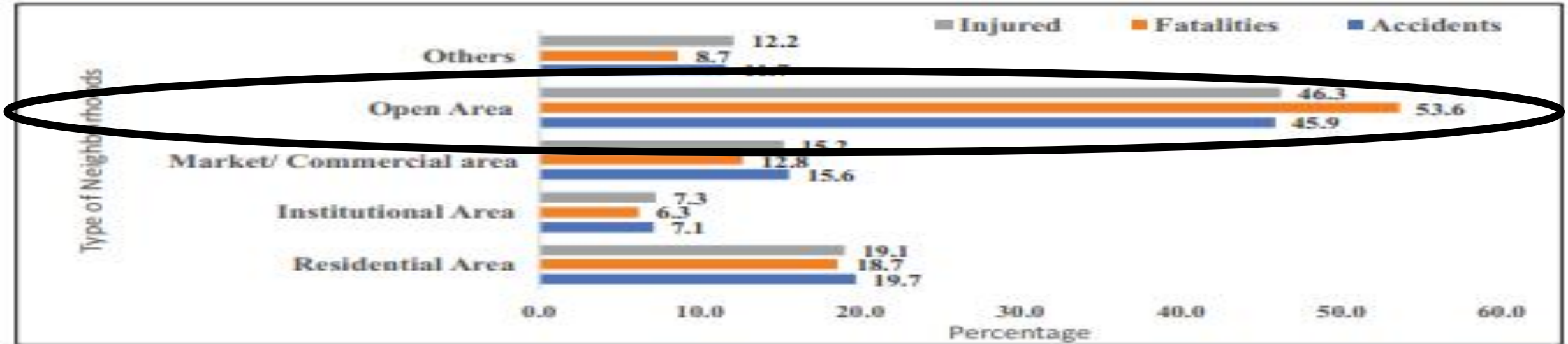
Type of Licence	2019	2020	2021	2022	2023	% change in 2023 over 2022
Valid driving licence	3,31,967	2,64,991	2,90,261	3,20,235	3,40,960	6.5
% Share in total	72.6	71.2	70.4	69.4	70.9	
Learner's licence	24,972	19,117	19,184	18,298	16,074	-12.2
% Share in total	5.5	5.1	4.7	4	3.3	
Without valid licence	41,126	34,716	37,182	35,925	33,827	-5.8
% Share in total	9	9.3	9	7.8	7	
Not known	58,894	53,357	65,805	86,854	89,722	3.3
% Share in total	12.9	14.3	16	18.8	18.7	
Total	4,56,959	3,72,181	4,12,432	4,61,312	4,80,583	4.2



ACCIDENTS -HAPPENING IN A PARTICULAR GEOGRAPHICAL AREA

Area	Total accidents			Persons killed			Persons Injured		
	2022	2023	%change	2022	2023	%change	2022	2023	%change
Residential Area	86,292	94,901	10	29,950	32,253	7.7	78,906	88,258	11.9
Institutional Area	29,384	34,277	16.7	10,223	10,809	5.7	28,452	33,606	18.1
Market/ Commercial area	66,125	74,950	13.3	19,950	22,055	10.6	61,335	70,389	14.8
Open Area	2,19,988	2,20,454	0.2	92,772	92,739	0	2,13,878	2,14,193	0.1
Others	59,523	56,001	-5.9	15,596	15,034	-3.6	60,795	56,379	-7.3
Total	4,61,312	4,80,583	4.2	1,68,491	1,72,890	2.6	4,43,366	4,62,825	4.4

Chart 3.3 Accident, Fatalities and Injuries classified by type of Neighborhoods in 2023 (in percent)



ACCIDENTS -TYPE OF ROAD FEATURES

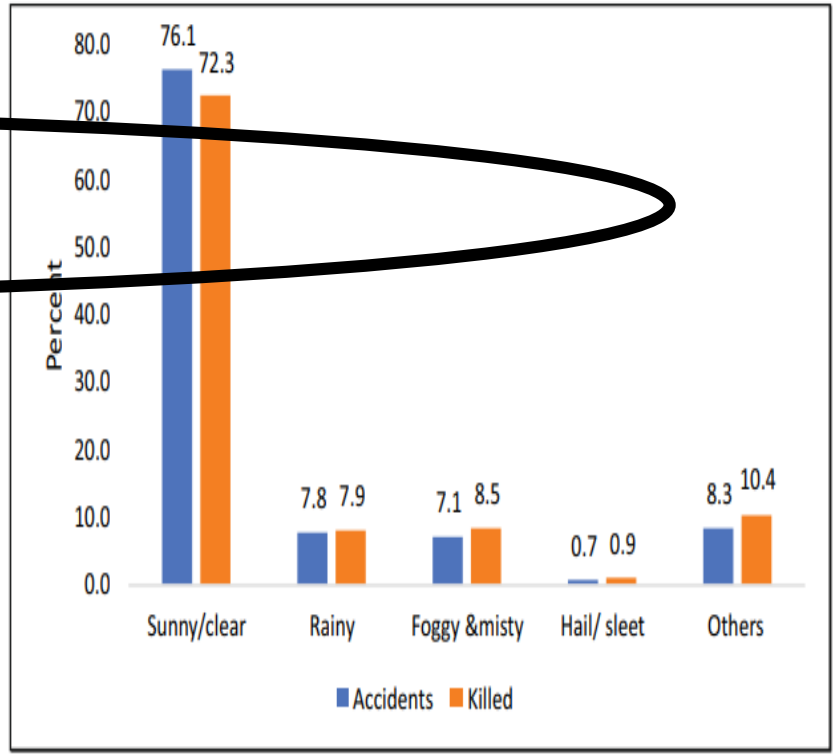
Road feature	Number of accidents			Persons killed			Persons injured		
	2022	2023	%age change	2022	2023	%age change	2022	2023	%age change
Straight road	3,09,247	3,22,005	4.1	1,11,815	1,14,447	2.4	2,97,694	3,10,678	4.4
Curved road	54,593	58,626	7.4	20,573	22,263	8.2	55,866	59,447	6.4
Bridge	14,111	15,528	10	6,258	6,552	4.7	13,062	14,781	13.2
Culvert	7,384	10,308	39.6	3,473	4,271	23	6,309	9,302	47.4
Potholes	4,446	5,840	31.4	1,856	2,161	16.4	3,734	5,309	42.2
Steep grade	4,475	5,094	13.8	2,056	2,154	4.8	4,089	4,906	20
Ongoing road works/ Under construction	9,211	9,425	2.3	4,054	3,904	-3.7	7,955	8,246	3.7
Others	57,845	53,757	-7.1	18,406	17,138	-6.9	54,657	50,156	-8.2
Total	4,61,312	4,80,583	4.2	1,68,491	1,72,890	2.6	4,43,366	4,62,825	4.4

ACCIDENTS -TYPE OF TRAFFIC CONTROL

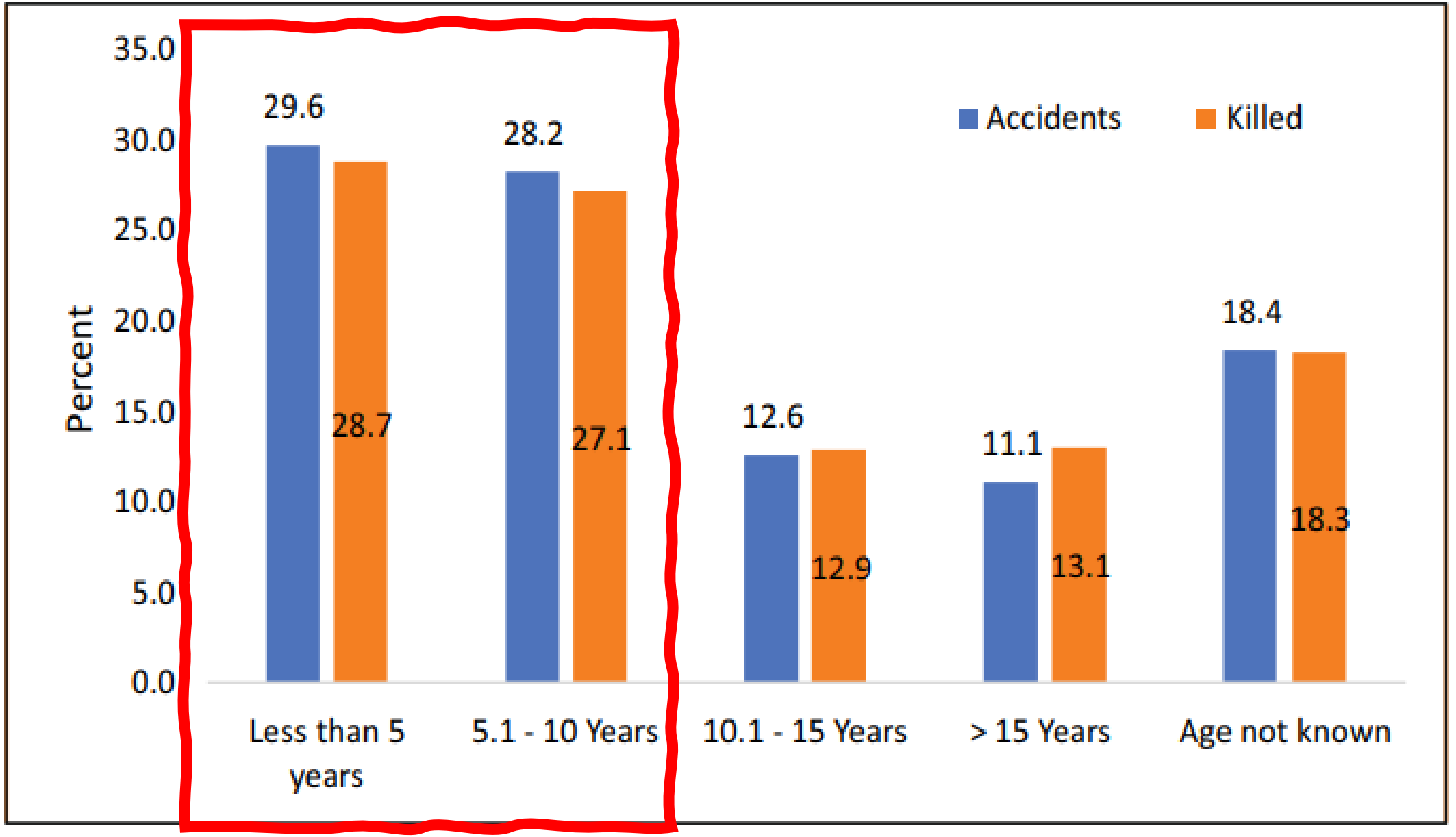
Junction type	Number of accidents			Persons killed			Persons injured		
	2022	2023	%age change	2022	2023	%age change	2022	2023	%age change
Traffic light signal(a)	9,746	9,724	-0.2	2,238	2,131	-4.8	8,913	9,086	1.9
Share in Total	2.1	2		1.3	1.2		2	2	
Police Controlled(b)	8,804	9,068	3	2,421	2,311	-4.5	7,733	8,313	7.5
Share in Total	1.9	1.9		1.4	1.3		1.7	1.8	
Stop Sign(c)	5,060	5,673	12.1	1,842	2,087	13.3	4,510	5,111	13.3
Share in Total	1.1	1.2		1.1	1.2		1	1.1	
Flashing Signal/Blinker(d)	4,927	7,747	57.2	1,658	2,354	42	4,414	7,654	73.4
Share in Total	1.1	1.6		1	1.4		1	1.7	
Uncontrolled(e)	74,348	76,455	2.8	24,857	25,471	2.5	68,833	69,945	1.6
Share in Total	16.1	15.9		14.8	14.7		15.5	15.1	
Others	3,58,427	3,71,916	3.8	1,35,475	1,38,536	2.3	3,48,963	3,62,716	3.9
Share in Total	77.7	77.4		80.4	80.1		78.7	78.4	
Total	4,61,312	4,80,583	4.2	1,68,491	1,72,890	2.6	4,43,366	4,62,825	4.4

ACCIDENTS -TYPE OF WEATHER CONDITIONS

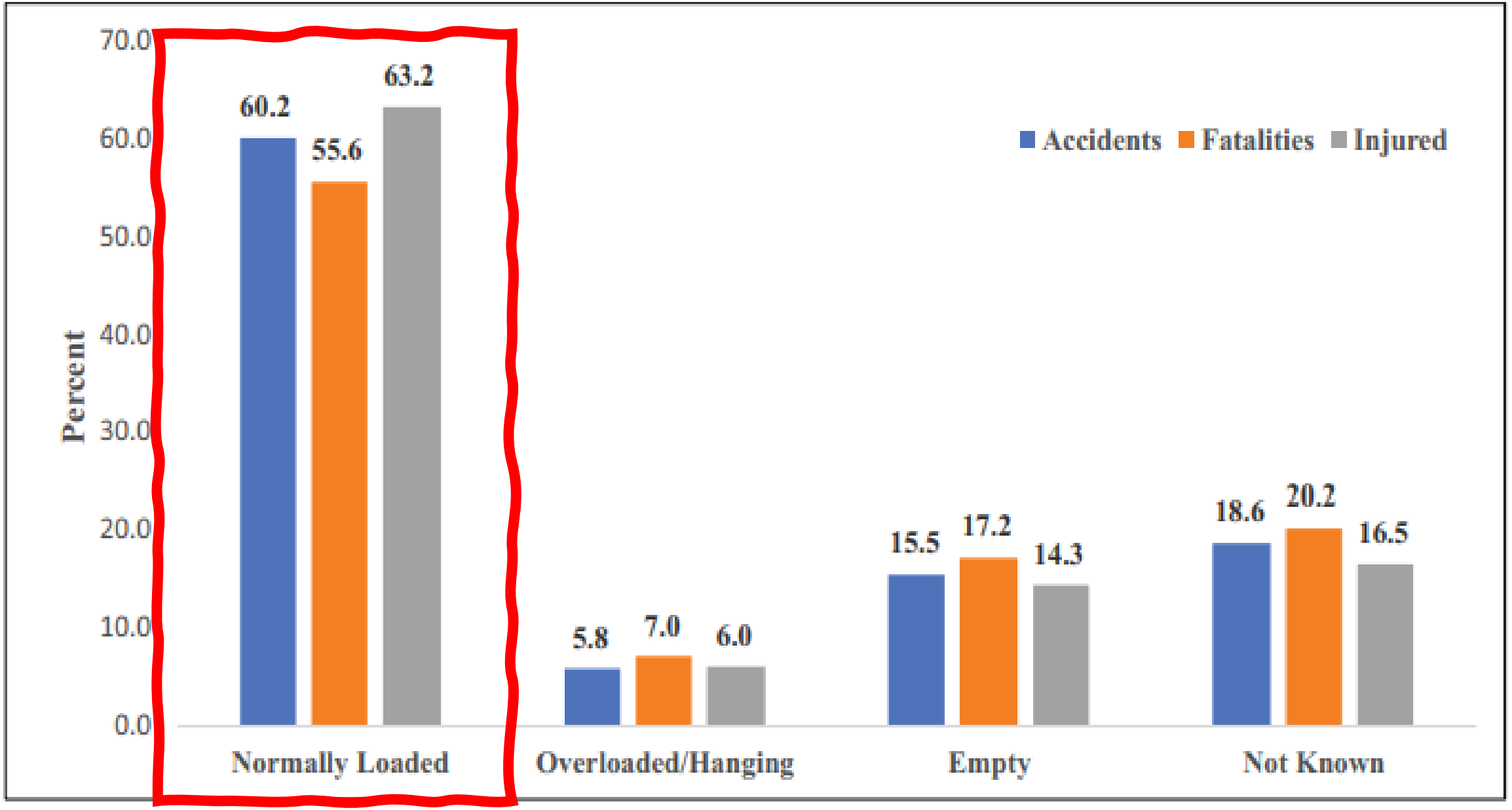
Weather condition	No of accidents			Persons killed			Persons injured		
	2022	2023	%age change	2022	2023	%age change	2022	2023	%age change
Sunny/clear	3,42,516	3,65,865	6.8	1,19,585	1,25,065	4.6	3,32,586	3,59,074	8
Rainy	38,329	37,316		14,773	13,734	-7	36,950	36,102	-2.3
Foggy &misty	34,262	34,266		14,583	14,617	0.2	30,796	30,646	-0.5
Hail/ sleet	4,083	3,378	-17.3	1,871	1,516	-19	3,621	3,064	-15.4
Others	42,122	39,758	-5.6	17,679	17,958	1.6	39,413	33,939	-13.9
Total	4,61,312	4,80,583	4.2	1,68,491	1,72,890	2.6	4,43,366	4,62,825	4.4



ACCIDENTS –AGE OF IMPACTING VEHICLES



ACCIDENTS –LOAD CONDITIONS OF VEHICLES



ROAD SAFETY & ACCIDENT OVERVIEW IN INDIA – 2023 (MORTH REPORT)

Type of Road Accidents in 2023 (in percent)

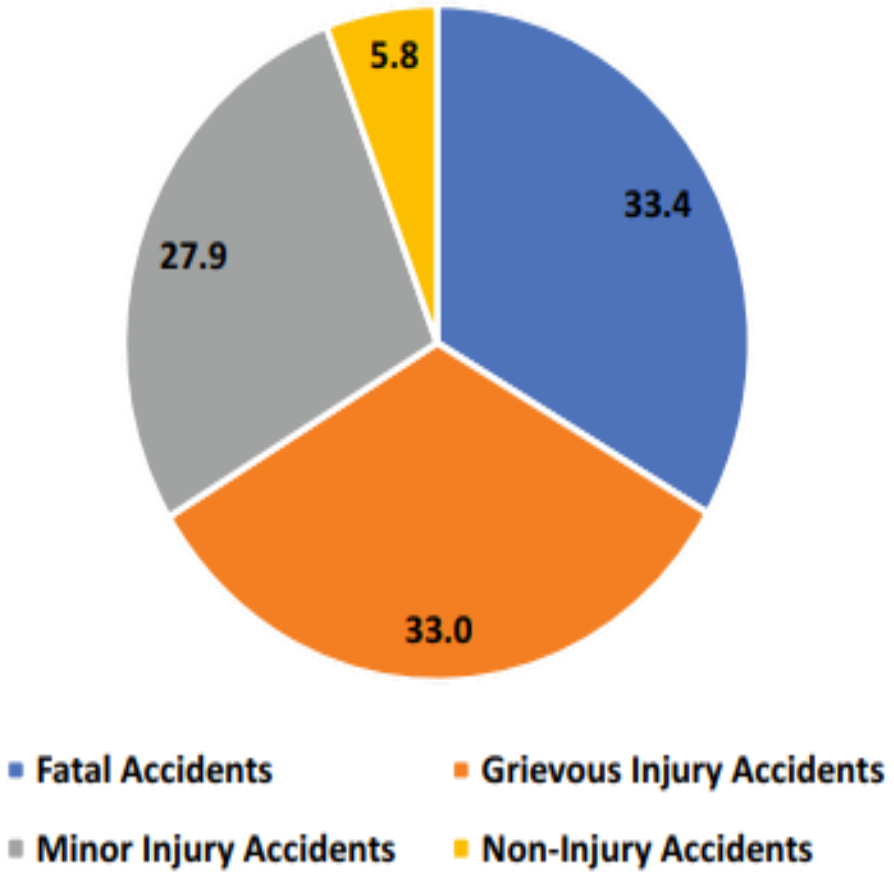


Table 1.5: Road Accidents by type of collision- 2023 vis-à-vis 2022

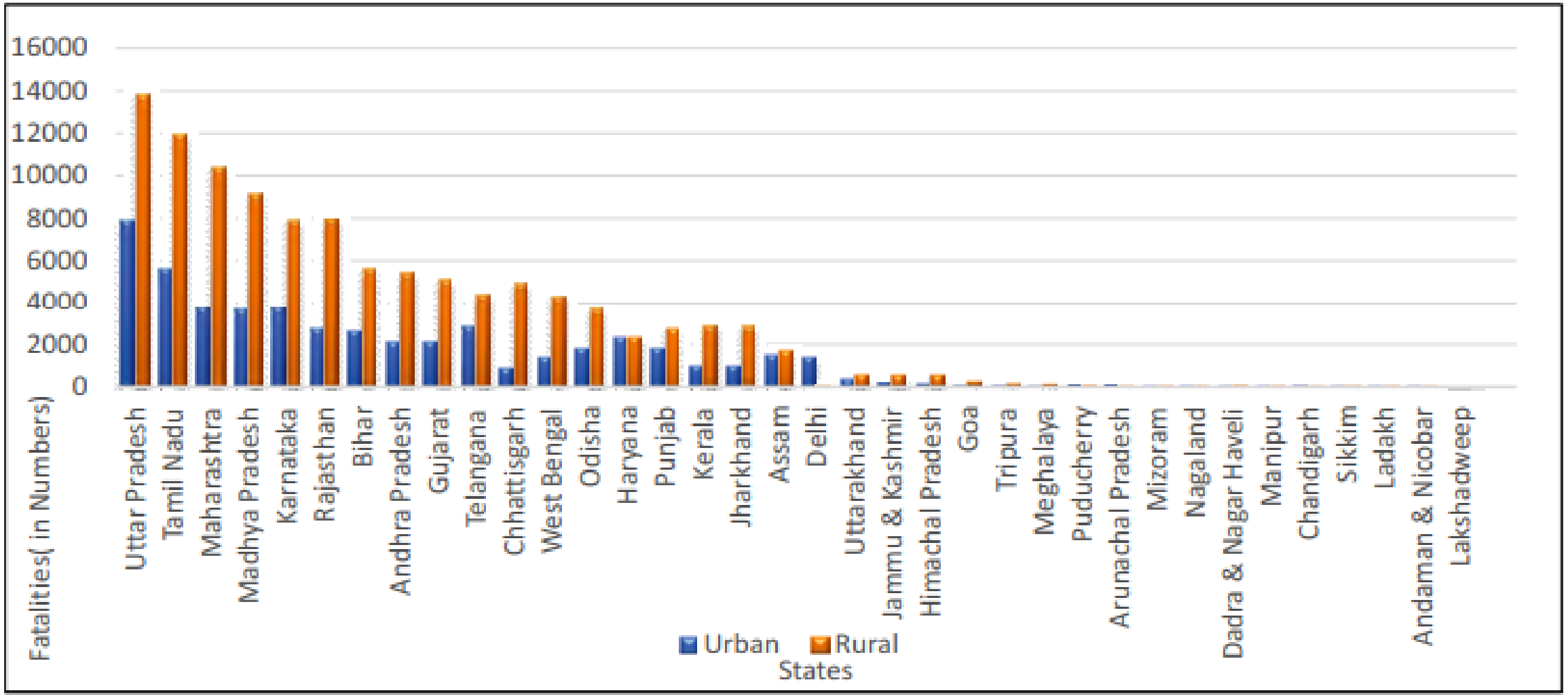
Type of collision	2022			2023			% change in 2023 over 2022		
	Accidents	Killed	Injured	Accidents	Killed	Injured	Accidents	Killed	Injured
Hit and Run	67,387	30,486	54,726	68,783	31,209	54,574	2.1	2.4	-0.3
% share	15	18	12	14	18	12			
With parked Vehicle	14,139	6,012	12,666	13,810	5,636	12,575	-2.3	-6.3	-0.7
% share	3	4	3	3	3	3			
Hit from Back	98,668	32,907	95,241	1,10,656	36,804	1,07,161	12.1	11.8	12.5
% share	21	20	22	23	21	23			
Hit from side	71,146	20,357	72,190	73,805	20,623	74,017	3.7	1.3	2.5
% share	15	12	16	15	12	16			
Run off Road	20,590	9,862	20,170	21,527	10,196	20,719	4.6	3.4	2.7
% share	4	6	5	4	6	4			
Fixed object	15,368	7,307	14,829	17,451	8,291	16,416	13.6	13.5	10.7
% share	3	4	3	4	5	4			
Vehicle overturn	20,070	9,827	21,138	18,905	9,124	21,216	-5.8	-7.2	0.4
% share	4	6	5	4	5	5			
Head on collision	77,886	26,413	83,580	84,348	28,898	89,867	8.3	9.4	7.5
% share	17	16	19	18	17	19			
Others	76,058	25,320	68,826	71,298	22,109	66,280	-6.3	-12.7	-3.7
% share	16	15	16	15	13	14			
Total	**4,61,312**	**1,68,491**	**4,43,366**	**4,80,583**	**1,72,890**	**4,62,825**	**4.2**	**2.6**	**4.4**

ACCIDENTS – NONUSE HELMETS & SEAT BELTS

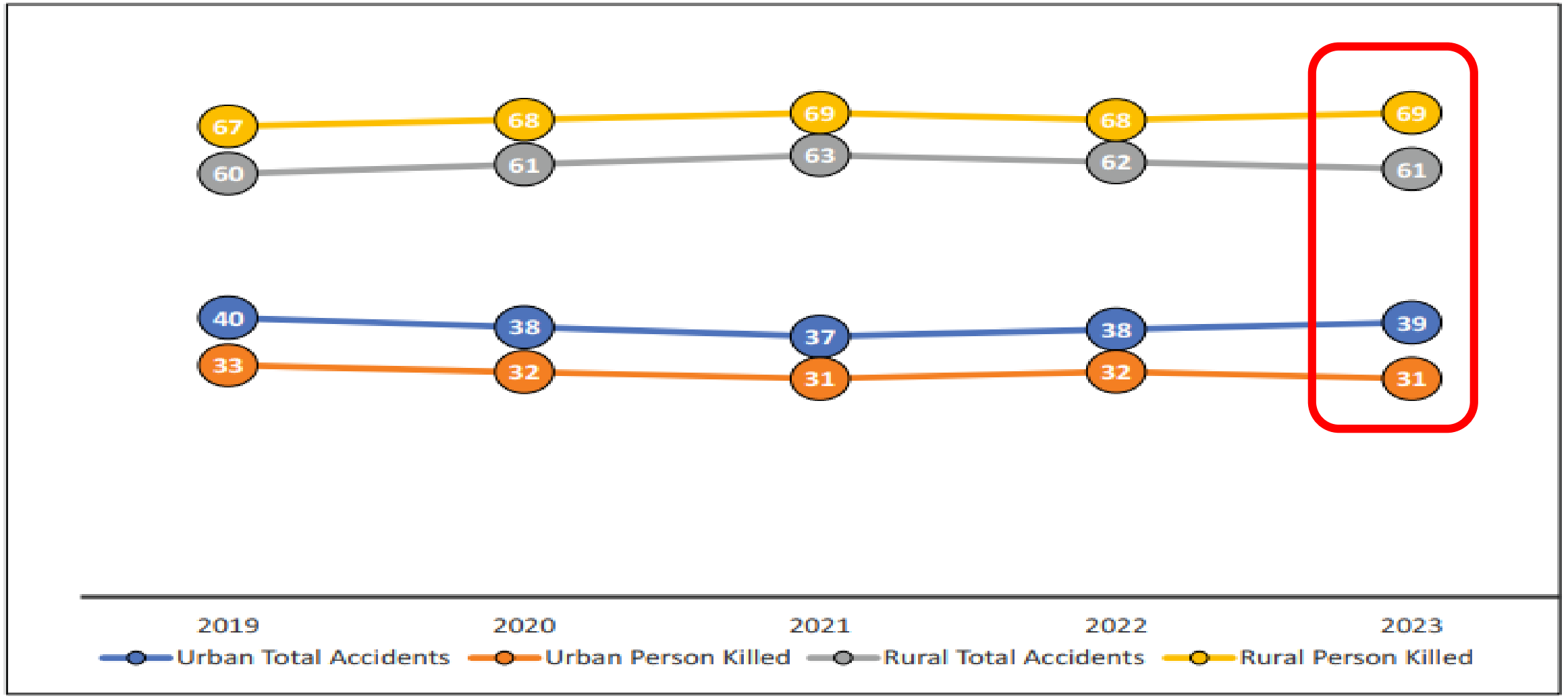
Category	Non-Wearing of Helmet		Non wearing of Seat Belt	
	Killed	Injured	Killed	Injured
Drivers	39,160	66,204	8,441	17,204
% Share in Total	71.8	62.6	52.7	42.4
Passenger	15,408	39,523	7,584	23,393
% Share in Total	28.2	37.4	47.3	57.6
Total	54,568	1,05,727	16,025	40,597

SPATIAL AND INTER-TEMPORAL DISTRIBUTION OF ROAD ACCIDENTS

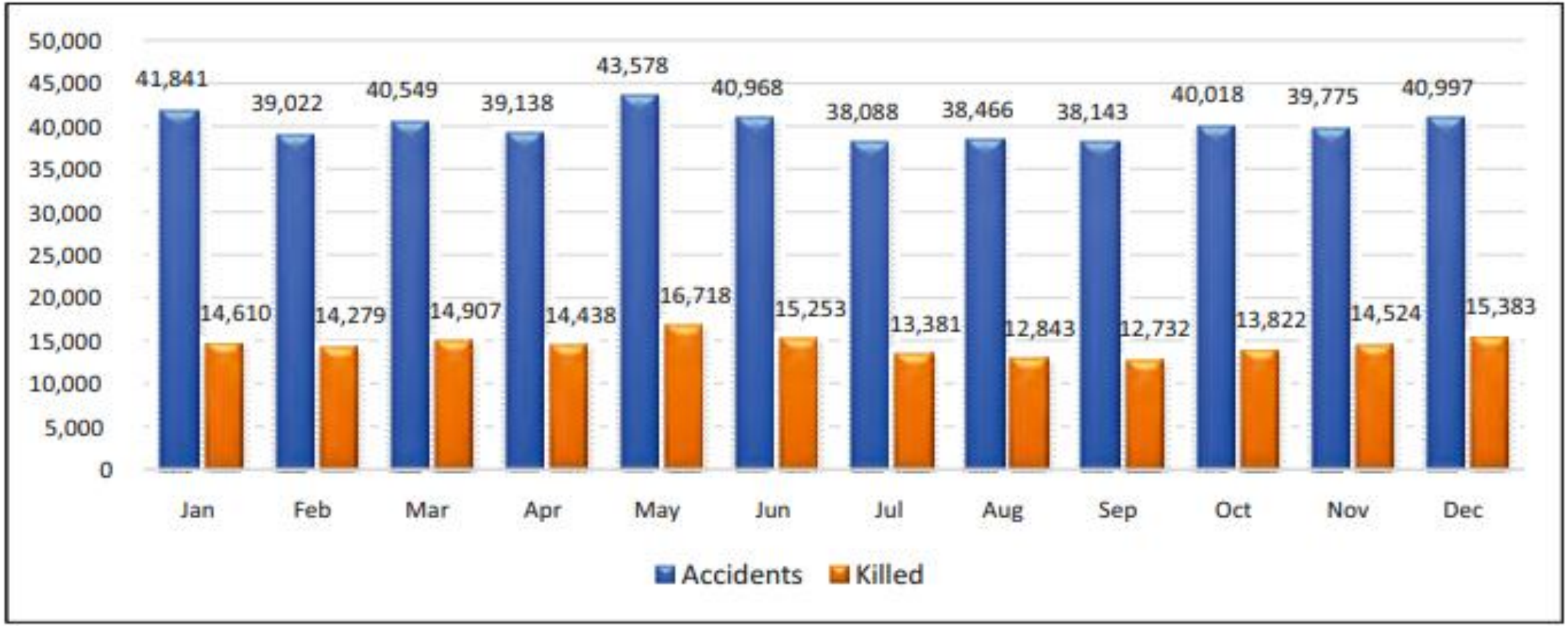
State-wise and Rural Urban-wise distribution of fatal accidents during 2023



TRENDS OF ACCIDENT AND PERSONS KILLED IN RURAL AND URBAN AREAS (IN PERCENTAGE)



The month-wise distribution of number of Accidents and Fatalities during 2023



Road Accidents by time interval of day during 2023 (percentage share)

Mitigation Measures by MoRTH (2023)

e-DAR / iRAD (Electronic Detailed Accident Report / Integrated Road Accident Database)

- Central repository for reporting, management, claim processing & analysis of road accident data
- **Rolled out in 36 States/UTs for live data entry of road accidents.**
- Integrated with national databases like VAHAN, SAARTHI, CCTNS etc.

Cashless Medical Treatment Scheme for Accident Victims

- MoRTH planning to introduce cashless treatment for all injured accident victims across the country.
- The scheme under the Motor Vehicle Amendment Act, 2019.

Education & Awareness Measures

- Grants given to NGOs / institutions for road safety advocacy, pilot projects, awareness campaigns, safer road users etc. Publicity via social media, print, electronic media to build awareness.

Blackspot Identification & Rectification

- Identification of accident-prone spots (“blackspots”) and taking engineering measures to rectify them.
- Short-term measure allotment: guidelines delegating powers & funds for rectification of accident-prone spots (installation of crash barriers, signage, junction improvements, etc.).

Mitigation Measures by MoRTH (2023)

Engineering Measures (Road & Vehicles)

- Incorporating road safety features at design/planning stage.
- Improvement of highways, road widening, better signage, crash barriers, reflectors etc.

Enforcement & Regulatory Measures

- Mandating stricter norms, possibly for vehicle safety, licensing, etc. (Part of the larger 4E strategy).
- Emergency Care / Post-Accident Response
- Emphasis on "golden hour" care for accident victims.
- Plans for expanding cashless trauma care to nearest appropriate hospital.

Policy Targets

- Target **to reduce road accidents by 50% by 2030 using the multi-pronged strategy 4Es (Engineering, Education, Enforcement, Emergency Care).**
- Setting deadline (May 2025) to rectify identified major blackspots

THE TIMES OF INDIA

Road accident data on eDAR portal helps design safety, emergency measures

Suparna Roy / Nov 15, 2025, 02:33 IST

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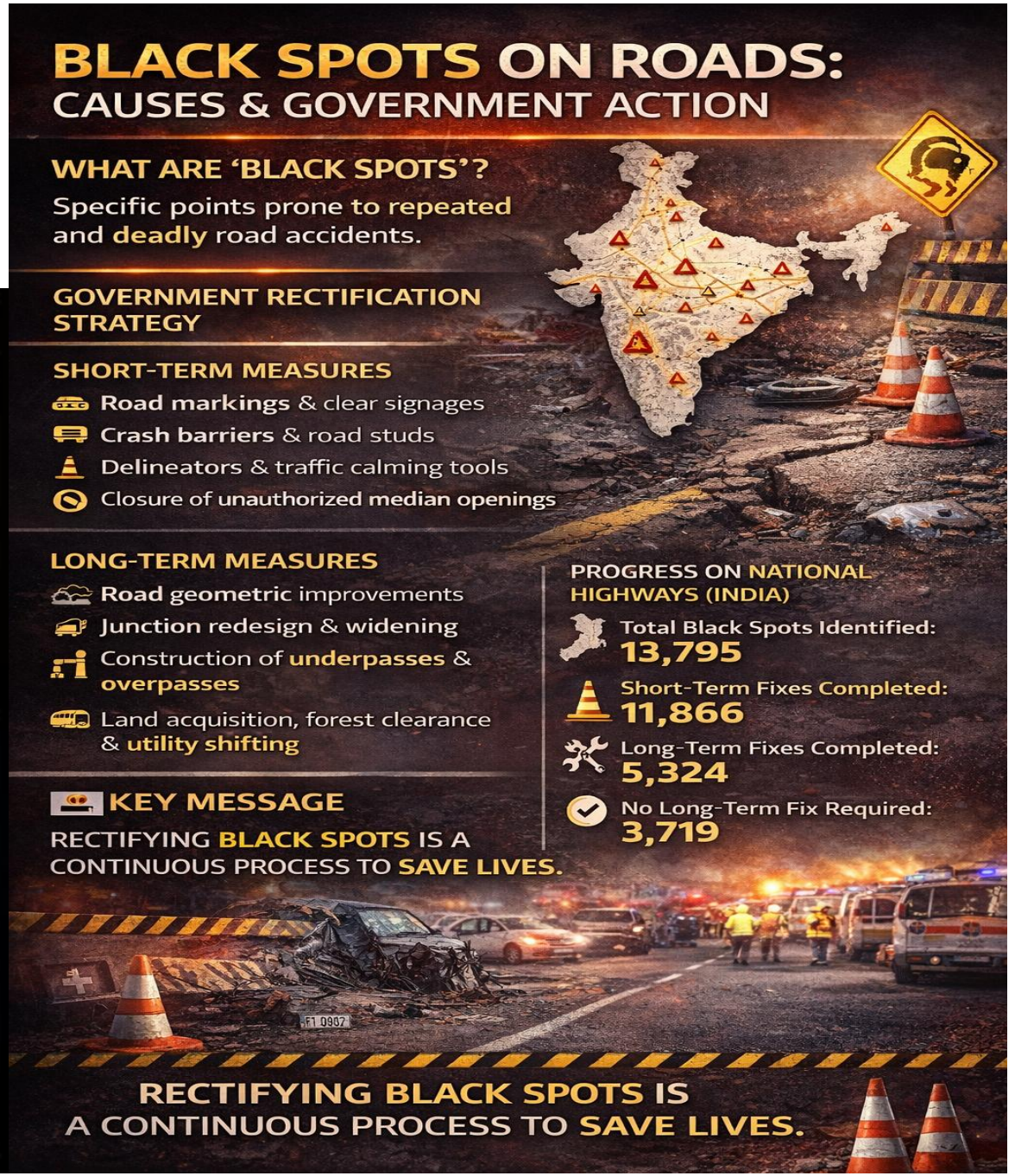
HOW EDAR DATA AFFECTS PUBLIC

- eDAR data is considered the only authentic data by Union ministry of road transport and highways
- Benefit for schemes like cashless treatment scheme, where cashless treatment of up to Rs 1.5 lakh is given to accident victims, is given only if the accident is recorded on the eDAR portal
- Insurance claims by Motor Accident Claims Tribunal are processed only if the accident is reported on the eDAR portal
- Good Samaritans are awarded a grant under the Rah-Veer scheme only if the accident where the good samaritan has helped is uploaded on the eDAR portal



MOTOR VEHICLE ACT AMENDMENTS

KEY UPDATES FOR SAFER ROADS

STRICTER PENALTIES
Higher fines for traffic violations

JUVENILE OFFENSES
Penalty to parents; License cancelled

HELMET & SEATBELT MANDATORY
Compulsory helmet & seatbelt use

OVERSPEEDING FINES
Increased fines for speeding

ROAD SAFETY FUND
Dedicated fund for road safety initiatives

GOOD SAMARITANS
Protecting those who aid accident victims

VEHICLE FITNESS TESTS
Regular checks to ensure roadworthiness

DRIVER TRAINING
Improved driving and safety education

ANTI-LOCK BRAKES (ABS)
ABS mandatory for all motorbikes

1-3-5-6 RULE

THE FRAMEWORK OF MOTOR VEHICLE REGULATIONS IN INDIA

1 COUNTRY-WIDE IMPLEMENTATION
Applies to all of india

3 TIER REDRESSAL MECHANISM
- District Forum
- State Commission
- National Commission

1 COUNTRY-WIDE IMPLEMENTATION
Applies to all of India

3 TIER REDRESSAL MECHANISM
District Forum ▸▸ State Commission

5 MAJOR OFFENSES COVERED
Speeding • Drunk Driving • Reckless Driving
No Helmet • No Seatbelt

6 RIGHTS FOR CONSUMERS UNDER THE ACT
- ☑ Safety
- ☑ Information
- ☑ Redressal
- ☑ Education

Safety
- ☑ Information
- ☑ Redressal
- ☑ Education
- ☑ Choice
- ☑ Hearing

EFFECTIVE JAN 1, 2026

ABS ANTI-LOCK BRAKING SYSTEM

HELMETS MANDATORY

MANDATORY FOR ALL MOTORCYCLES

Cashless Treatment to Road Accident Victims

Posted On: 29 JAN 2026 4:17PM by PIB Delhi

In accordance with the legal mandate under Section 162 of the Motor Vehicles Act, 1988, Cashless Treatment for Road Accident Victims Scheme, 2025 has been notified vide S.O. 2015(E) dated 05.05.2025. Furthermore, comprehensive guidelines detailing the process flow, roles and responsibilities of various stakeholders, and the Standard Operating Procedures (SOPs) for its implementation have been issued vide S.O. 2489 (E) dated 04.06.2025.

Key features of the scheme are as under:

i. Treatment covers up to Rs. 1.5 lakh per victim will be provided, subject to a maximum cap of 7 days from date of accident. The treatment cover will be available to those victims who are involved in road accidents caused by use of motor vehicles across any category of road.
ii. Every motor vehicle road accident victim shall be provided with stabilization treatment for upto 24 hours in non-life- threatening cases and upto 48 hours in life- threatening cases at designated hospitals, subject to police response.
iii. This statutory scheme will take precedence over any other Central / State level schemes.
iv. The Scheme is being implemented through the amalgamation of two existing platforms, i.e. eDAR (electronic Detailed Accident Report) used by Police officials for reporting of accidents and TMS 2.0 (Transaction Management System) of National Health Authority (NHA) used by hospitals for treatment, claim submission and processing of payments.
v. The reimbursement to hospitals is being done through Motor Vehicle Accident Fund (MVAF) which is funded through contributions from General Insurance companies for cases where the offending Motor Vehicle is insured and through budgetary support for other-than-insured cases.
vi. As per the Scheme guidelines notified vide S.O. 2489 (E) dated 04.06.2025, hospitals empanelled under the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PM-JAY) shall be automatically deemed designated hospitals for the purposes of the Scheme. Further, NHA has issued detailed guidelines for designating and onboarding of additional hospitals by States & UTs vide OM S-12018/81/2024 dated 20 May 2025.

The Scheme is being implemented through the amalgamation of two existing platforms, i.e. eDAR and TMS 2.0. The third-party insurance status of the offending vehicle is captured on eDAR as it is integrated with VAHAN Portal.

EDUCATION & AWARENESS MEASURES

1. National Road Safety Campaigns (Government of India)
The Ministry of Road Transport & Highways (MoRTH) conducts nationwide awareness programs using TV, radio, social media, NGOs, and schools. Activities include pledges, quizzes, poster competitions, and youth engagement.

2. National Road Safety Month & Road Safety Week
Observed annually to promote safe driving behavior, helmet use, seatbelt awareness, speed control, and anti-drunk driving campaigns through public events and school programs.

3. Road Safety Education in Schools & Colleges
Government and NGOs integrate road safety education into school curricula, conduct training sessions, traffic parks, quizzes, and awareness drives for students.

4. Indian Road Safety Campaign (IRSC) – Youth Awareness
A youth-led initiative working with IITs and government bodies to educate millions of students, promote safe behavior, conduct training, and build road safety leaders.

5. National Road Safety Policy (India)
Provides a national framework to improve public awareness, strengthen training for drivers, improve enforcement, and promote safer road behavior.

6. Public Awareness Through NGOs & CSR Programs
Organizations like CEE, United Way Mumbai, BMW India Foundation, and IRF India run:

1. Road safety workshops
2. Community awareness drives
3. Driver training
4. Emergency response education

7. Training & Certification for Drivers
Government supports:

1. Model Driving Training Institutes
2. Road Safety Auditor Courses
3. First responder training
4. Traffic rule education

Category	Indexes & India Rank / Value
🌍 Population & Demographics	Population — 1
💰 Economy & Finance	Nominal GDP — 5 GDP (PPP) — 3 Foreign Exchange Reserves — 4 Gold Reserves — 8 Ease of Doing Business — 63 Global Competitiveness Index — 45
□ Military & Power	Military Power (Global Firepower) — 4 Overall Global Power (US News) —12 Defense Budget — 3
🎓 Education & Innovation	Global Innovation Index — 39 Education Index — 120 QS Higher Education Strength — 26 AI Readiness Index — 40
⚖□ Governance & Freedom	Corruption Perception Index — 93 Press Freedom Index — 161 Democracy Index — 41 Rule of Law Index — 79
💻 Technology & Digital	Global Cybersecurity Index — 10 E-Government Index — 105 Digital Payments Adoption — 1 Startup Ecosystem — 3
🚀 Science & Space	Space Power Rank — 6 Satellite Launch Capability — Top 6 Research Output — 4
🌍 Trade & Global Influence	Merchandise Exports — 20 Merchandise Imports — 9 Tourism Arrivals — 22 Passport Power Index — 82

Category	Indexes & India Rank / Value
Human Development & Society	Human Development Index (HDI) — 130 World Happiness Index — 118 Global Hunger Index — 111 Life Expectancy Rank — 140 Gender Inequality Index — 120 Social Progress Index — 110
Environment & Sustainability	Climate Change Performance Index —7 Environmental Performance Index — 176 Renewable Energy Capacity — 4 Carbon Emissions (Total) — 3 Carbon Emissions (Per Capita) — 140
Health & Well-Being	Healthcare Index — 145 Global Health Security Index — 66 Infant Mortality Rate Rank — 145
Road Safety	Road Accident Deaths — 1 (Highest globally)

Table 1.3A - Distribution of Deaths in India: 2021-2023, Person

Causes of Death	Age-Group (Percentage of Deaths)							
	Person	0-4	05-14	15-29	30-44	45-54	55-69	70+
Communicable, maternal, perinatal and nutritional conditions	**23.4**	**80.4**	**34.1**	**21.1**	**19.6**	**17.6**	**19.1**	**22.0**
Acute bacterial sepsis & severe infections	0.5	4.1	0.4	0.4	0.4	0.3	0.3	0.3
Diarrhoeal diseases	2.1	4.4	6.7	2.5	1.5	1.2	1.6	2.5
Fever of unknown origin	4.9	4.0	8.0	3.8	3.1	3.0	4.3	6.5
HIV/AIDS	0.1	0.0	0.0	0.2	0.3	0.2	0.1	0.0
Malaria	0.1	0.2	0.5	0.3	0.2	0.1	0.1	0.1
Maternal conditions	0.2	0.0	0.0	2.7	0.6	0.0	0.0	0.0
Nutritional deficiencies	0.3	0.6	1.0	0.4	0.3	0.2	0.2	0.3
Other infectious and parasitic diseases	0.7	2.1	5.4	1.8	1.1	0.6	0.5	0.3
Perinatal conditions	2.3	48.0	0.9	0.1	0.0	0.0	0.0	0.0
Respiratory infections	9.3	16.9	8.1	4.4	7.8	8.1	8.8	10.0
Selected tropical diseases	0.3	0.2	2.2	1.2	0.5	0.4	0.3	0.2
Tuberculosis	2.5	0.1	0.8	3.3	3.8	3.5	2.9	1.8
Injuries	**9.4**	**4.2**	**31.2**	**44.2**	**23.2**	**11.4**	**5.7**	**4.1**
Injuries of Undetermined intent	0.1	0.1	0.4	0.7	0.3	0.1	0.0	0.0
Intentional injuries: Other Than Suicide	0.2	0.1	0.5	1.3	0.7	0.2	0.1	0.0
Intentional injuries: Suicide	2.5	0.0	4.1	17.3	8.0	3.1	1.1	0.4
Unintentional injuries: Motor Vehicle Accidents	2.9	0.5	6.9	16.4	8.8	4.2	1.8	0.6
Unintentional injuries: Other Than Motor Vehicle Accidents	3.7	3.5	19.4	8.4	5.4	3.8	2.7	3.1
Non-Communicable diseases	**56.7**	**11.1**	**27.1**	**28.7**	**53.7**	**67.8**	**70.6**	**54.4**
Cardiovascular diseases	31.0	0.3	2.7	9.7	23.1	35.6	39.8	32.5
Congenital anomalies	0.4	6.2	3.2	0.8	0.1	0.1	0.0	0.0
Diabetes mellitus	3.5	0.0	0.6	0.6	1.8	3.4	4.7	4.0
Digestive diseases	5.3	0.9	5.9	6.6	12.9	9.2	5.6	2.6
Genito-urinary diseases	3.0	0.1	1.1	2.5	3.9	4.6	3.9	2.3
Malignant and other Neoplasms	6.4	0.4	5.0	4.0	8.2	10.4	9.1	4.0
Neuro-psychiatric conditions	0.8	0.7	5.5	2.6	1.3	0.8	0.6	0.6
Other Non-Communicable Diseases	0.5	1.8	2.0	0.8	0.5	0.4	0.4	0.4
Respiratory diseases	5.7	0.6	1.1	1.1	1.9	3.3	6.5	8.0
Symptoms, signs and Ill-defined conditions	**10.5**	**4.3**	**7.6**	**6.0**	**3.5**	**3.2**	**4.5**	**19.5**
Ill-defined/All other symptoms, signs and abnormal clinical and laboratory findings	10.5	4.3	7.6	6.0	3.5	3.2	4.5	19.5

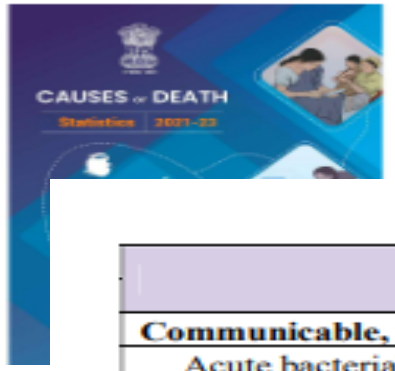
SAMPLE REGISTRATION SYSTEM (SRS)-CAUSE OF DEATH IN INDIA 2021-2023

2025 SRS_COD-STATISTICS_2021-2023

Office of the Registrar General & Census Commissioner, India (ORGI)

Table 1.3B - Distribution of Deaths in India: 2021-2023, Male

Causes of Deaths	Age-Group (Percentage of Deaths)							
	Person	0-4	05-14	15-29	30-44	45-54	55-69	70+
Communicable, maternal, perinatal and nutritional conditions	**21.6**	**80.3**	**30.9**	**13.9**	**17.2**	**16.3**	**17.8**	**21.2**
Acute bacterial sepsis & severe infections	0.5	4.2	0.3	0.3	0.4	0.3	0.3	0.3
Diarrhoeal diseases	1.7	4.1	5.5	1.6	1.2	1.0	1.2	2.1
Fever of unknown origin	4.1	3.4	8.2	2.9	2.6	2.5	3.7	5.8
HIV/AIDS	0.1	0.0	0.0	0.2	0.3	0.2	0.0	0.0
Malaria	0.1	0.2	0.2	0.3	0.1	0.1	0.1	0.0
Nutritional deficiencies	0.2	0.5	0.8	0.1	0.1	0.1	0.1	0.2
Other infectious and parasitic diseases	0.6	1.7	4.7	1.2	1.0	0.5	0.4	0.3
Perinatal conditions	2.3	49.5	0.8	0.0	0.0	0.0	0.0	0.0
Respiratory infections	8.9	16.4	7.8	3.6	7.4	7.8	8.3	10.0
Selected tropical diseases	0.3	0.2	2.2	1.1	0.4	0.3	0.3	0.1
Tuberculosis	2.8	0.1	0.3	2.5	3.7	3.6	3.3	2.2
Injuries	**11.3**	**4.3**	**36.6**	**53.1**	**26.1**	**12.8**	**6.4**	**4.0**
Injuries of Undetermined intent	0.1	0.1	0.6	0.8	0.3	0.1	0.1	0.0
Intentional injuries: Other Than Suicide	0.3	0.0	0.6	1.8	0.9	0.3	0.1	0.0
Intentional injuries: Suicide	3.0	0.0	4.0	17.0	8.5	3.6	1.4	0.5
Unintentional injuries: Motor Vehicle Accidents	4.1	0.5	9.4	23.3	10.7	4.9	2.2	0.8
Unintentional injuries: Other Than Motor Vehicle Accidents	3.8	3.7	22.0	10.1	5.7	4.0	2.6	2.6
Non-Communicable diseases	**58.7**	**11.2**	**24.5**	**27.3**	**53.3**	**67.8**	**71.7**	**58.4**
Cardiovascular diseases	32.4	0.3	3.0	9.7	23.2	37.2	41.4	34.7
Congenital anomalies	0.4	6.4	2.4	0.7	0.1	0.1	0.0	0.0
Diabetes mellitus	3.1	0.0	0.5	0.5	1.6	3.0	4.0	3.8
Digestive diseases	6.7	0.9	4.7	6.9	15.5	11.2	6.9	3.1
Genito-urinary diseases	3.3	0.1	0.8	2.2	3.8	4.4	4.0	2.9
Malignant and other Neoplasms	6.0	0.5	4.9	3.5	6.3	8.0	8.3	4.4
Neuro-psychiatric conditions	0.8	0.7	5.2	2.6	1.0	0.7	0.5	0.6
Other Non-Communicable Diseases	0.3	1.6	2.1	0.4	0.3	0.2	0.3	0.3
Respiratory diseases	5.6	0.6	0.8	0.8	1.6	2.9	6.4	8.6
Symptoms, signs and Ill-defined conditions	**8.5**	**4.3**	**8.0**	**5.6**	**3.4**	**3.1**	**4.1**	**16.5**
Ill-defined/All other symptoms, signs and abnormal clinical and laboratory findings	8.5	4.3	8.0	5.6	3.4	3.1	4.1	16.5



SAMPLE REGISTRATION SYSTEM (SRS)-CAUSE OF DEATH IN INDIA 2021-2023

2025 SRS_COD-STATISTICS_2021-2023

Office of the Registrar General & Census Commissioner, India (ORGI)

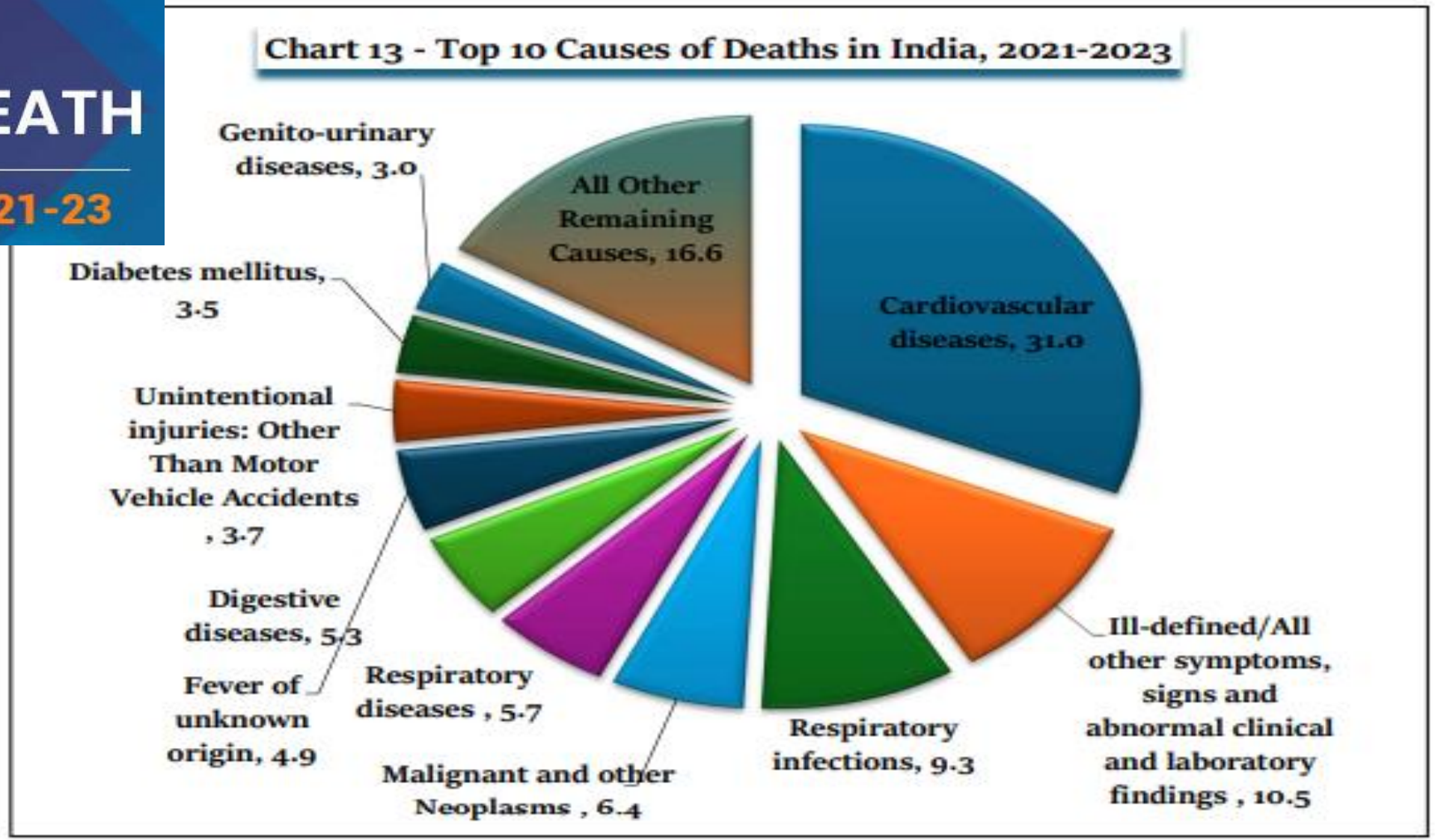
Table 1.3C - Distribution of Deaths in India: 2021-23, Female

Causes of Deaths	Age-Group (Percentage of Deaths)							
	Person	0-4	05-14	15-29	30-44	45-54	55-69	70+
Communicable, maternal, perinatal and nutritional conditions	**25.9**	**80.7**	**38.0**	**32.5**	**26.0**	**20.4**	**21.0**	**22.9**
Acute bacterial sepsis & severe infections	0.5	3.9	0.4	0.5	0.5	0.4	0.3	0.4
Diarrhoeal diseases	2.7	4.8	8.3	4.1	2.2	1.7	2.1	2.9
Fever of unknown origin	6.0	4.7	7.8	5.2	4.3	4.0	5.2	7.2
HIV/AIDS	0.1	0.0	0.0	0.2	0.5	0.2	0.1	0.0
Malaria	0.1	0.1	0.9	0.4	0.2	0.1	0.1	0.1
Maternal conditions	0.5	0.0	0.0	6.9	2.2	0.1	0.0	0.0
Nutritional deficiencies	0.4	0.7	1.3	0.8	0.6	0.4	0.3	0.3
Other infectious and parasitic diseases	0.8	2.6	6.2	2.7	1.6	0.8	0.6	0.3
Perinatal conditions	2.4	46.0	1.0	0.2	0.1	0.0	0.0	0.0
Respiratory infections	9.9	17.5	8.4	5.6	8.9	9.0	9.5	10.1
Selected tropical diseases	0.4	0.3	2.2	1.3	0.9	0.5	0.4	0.2
Tuberculosis	2.0	0.1	1.5	4.6	3.9	3.1	2.3	1.4
Injuries	**6.8**	**4.1**	**24.4**	**30.2**	**15.6**	**8.2**	**4.7**	**4.2**
Injuries of Undetermined intent	0.1	0.1	0.1	0.4	0.3	0.1	0.0	0.0
Intentional injuries: Other Than Suicide	0.1	0.2	0.3	0.5	0.4	0.1	0.1	0.0
Intentional injuries: Suicide	1.8	0.1	4.2	17.8	6.5	2.0	0.8	0.2
Unintentional injuries: Motor Vehicle Accidents	1.2	0.5	3.6	5.7	3.8	2.6	1.1	0.3
Unintentional injuries: Other Than Motor Vehicle Accidents	3.6	3.3	16.1	5.8	4.6	3.4	2.8	3.6
Non-Communicable diseases	**53.9**	**11.1**	**30.5**	**30.8**	**54.6**	**67.7**	**69.0**	**50.0**
Cardiovascular diseases	29.1	0.3	2.3	9.7	22.7	32.0	37.4	30.1
Congenital anomalies	0.4	5.9	4.2	0.9	0.2	0.1	0.0	0.0
Diabetes mellitus	4.1	0.0	0.7	0.9	2.3	4.2	5.9	4.1
Digestive diseases	3.2	0.9	7.5	6.3	6.1	4.7	3.8	2.0
Genito-urinary diseases	2.6	0.1	1.5	2.9	4.4	5.0	3.6	1.7
Malignant and other Neoplasms	6.9	0.3	5.1	4.9	13.2	15.9	10.3	3.5
Neuro-psychiatric conditions	0.9	0.7	5.8	2.6	1.9	1.0	0.7	0.6
Other Non-Communicable Diseases	0.7	2.1	1.9	1.3	1.0	0.8	0.6	0.5
Respiratory diseases	6.0	0.6	1.5	1.5	2.8	4.1	6.6	7.4
Symptoms, signs and Ill-defined conditions	**13.3**	**4.2**	**7.1**	**6.5**	**3.8**	**3.6**	**5.2**	**22.8**
Ill-defined/All other symptoms, signs and abnormal clinical and laboratory findings	13.3	4.2	7.1	6.5	3.8	3.6	5.2	22.8

सत्यमेव जयते

CAUSES OF DEATH

Statistics 2021-23



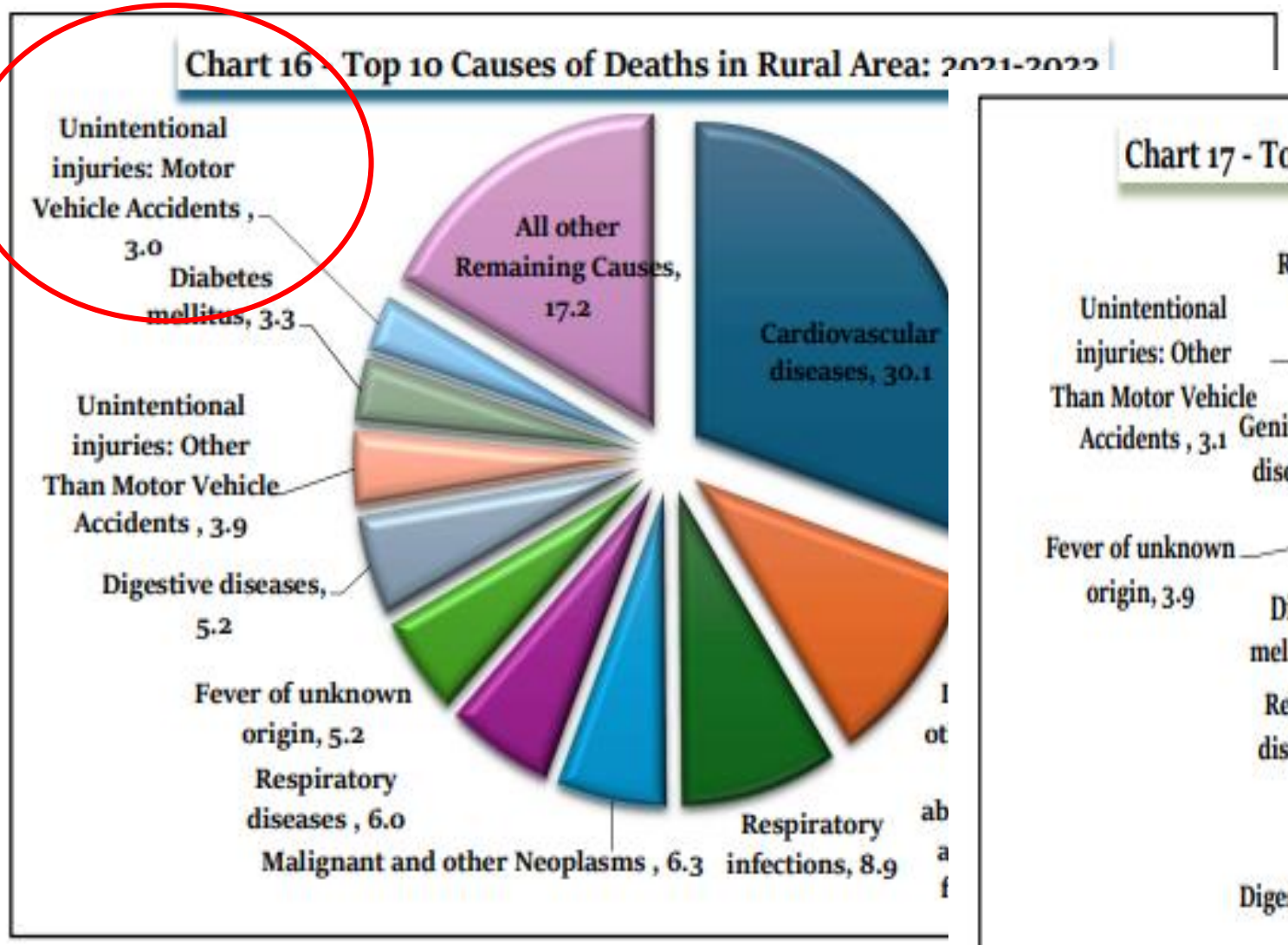


Chart 16 - Top 10 Causes of Deaths in Rural Area: 2021-2023
Unintentional injuries: Motor Vehicle Accidents , 3.0
Diabetes mellitus, 3.3
Unintentional injuries: Other Than Motor Vehicle Accidents , 3.9
Digestive diseases, 5.2
Fever of unknown origin, 5.2
Respiratory diseases , 6.0
Malignant and other Neoplasms , 6.3
Respiratory infections, 8.9
All other Remaining Causes, 17.2
Cardiovascular diseases, 30.1

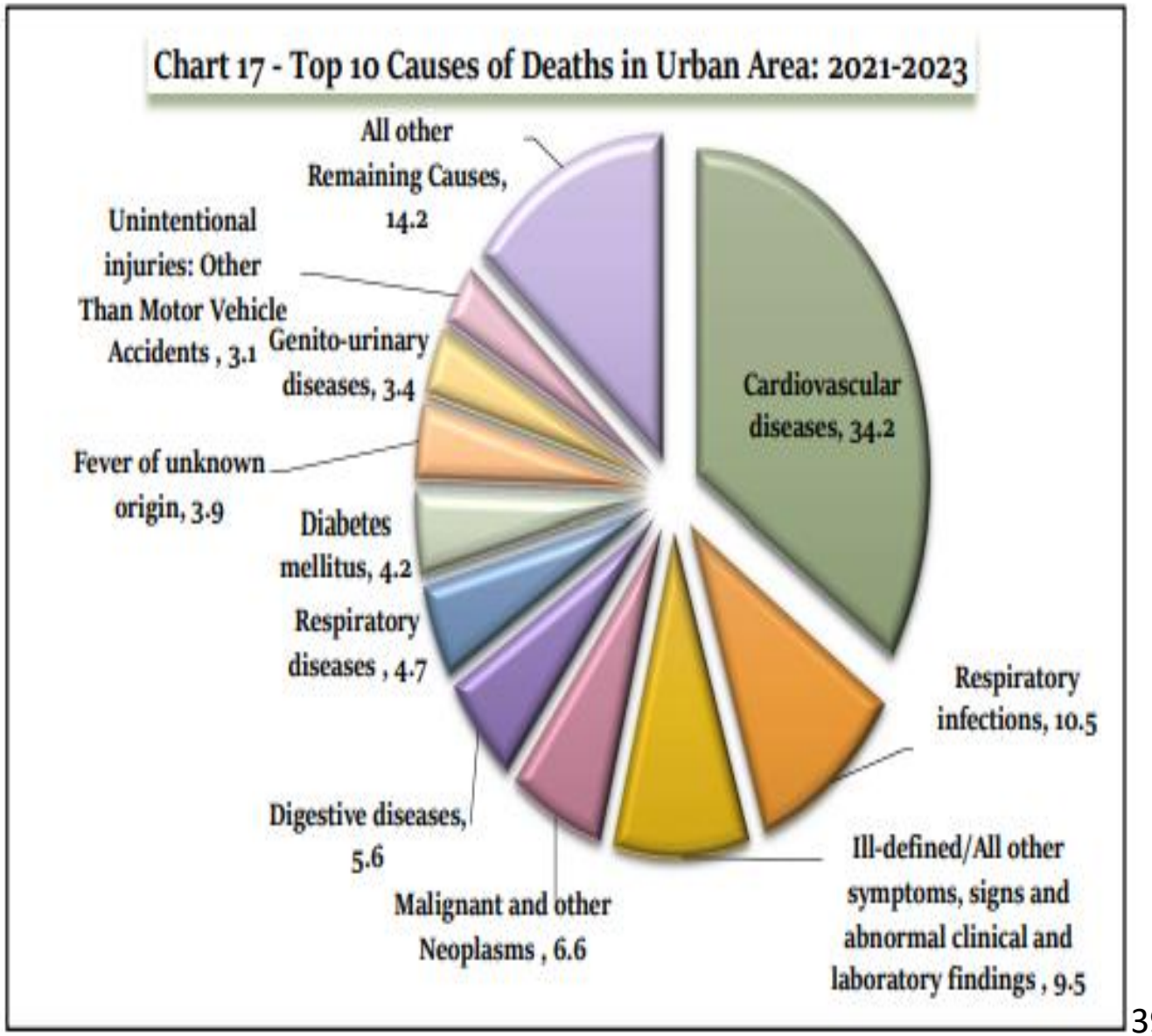


Chart 17 - Top 10 Causes of Deaths in Urban Area: 2021-2023
All other Remaining Causes, 14.2
Unintentional injuries: Other Than Motor Vehicle Accidents , 3.1
Genito-urinary diseases, 3.4
Fever of unknown origin, 3.9
Diabetes mellitus, 4.2
Respiratory diseases , 4.7
Digestive diseases, 5.6
Malignant and other Neoplasms , 6.6
Ill-defined/All other symptoms, signs and abnormal clinical and laboratory findings , 9.5
Respiratory infections, 10.5
Cardiovascular diseases, 34.2

Chart 58 - Top 10 causes of death in North Region, 2021-2023 (in %)

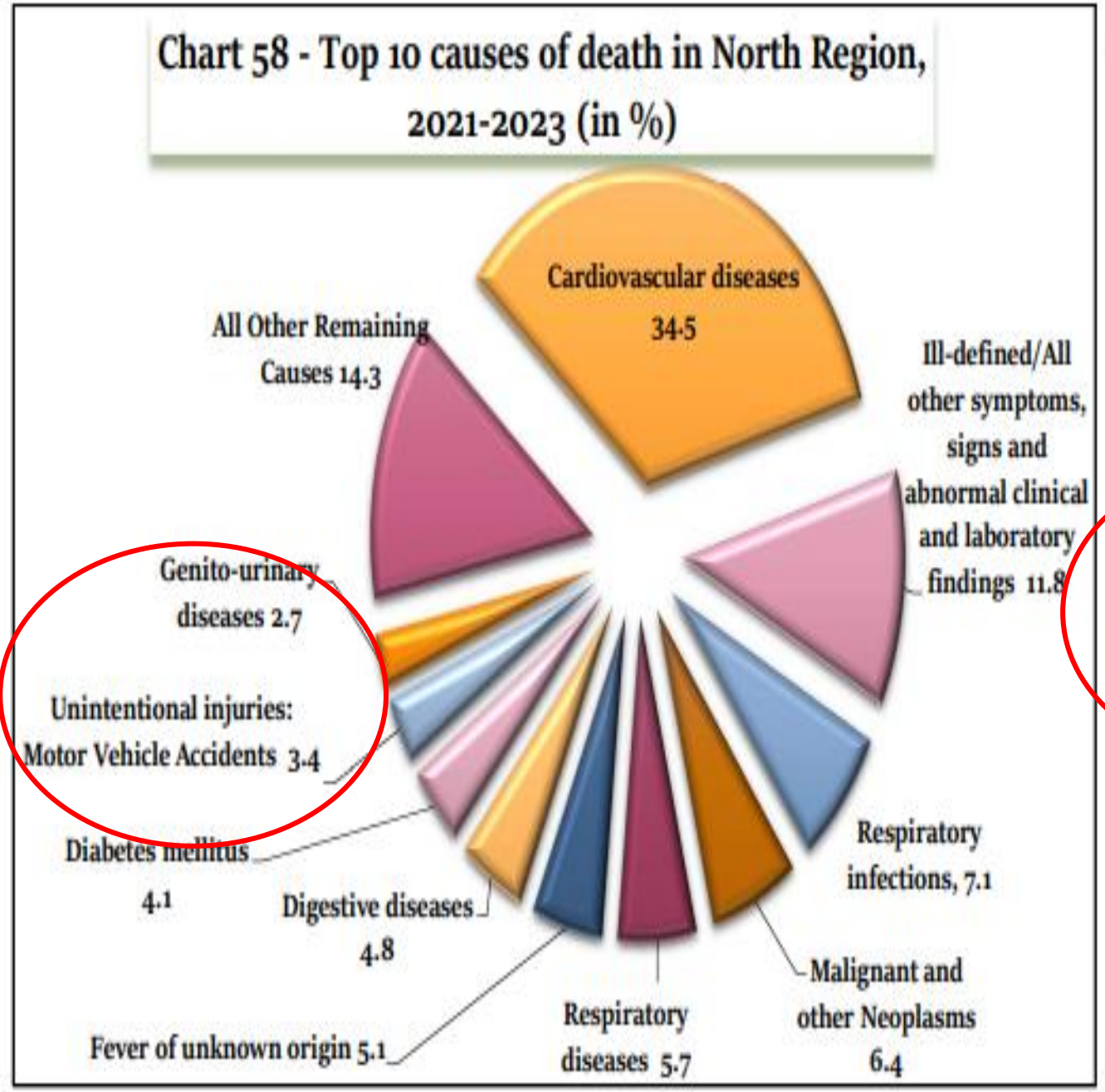


Chart 61 - Top 10 causes of death in Central Region, 2021-2023 (in %)

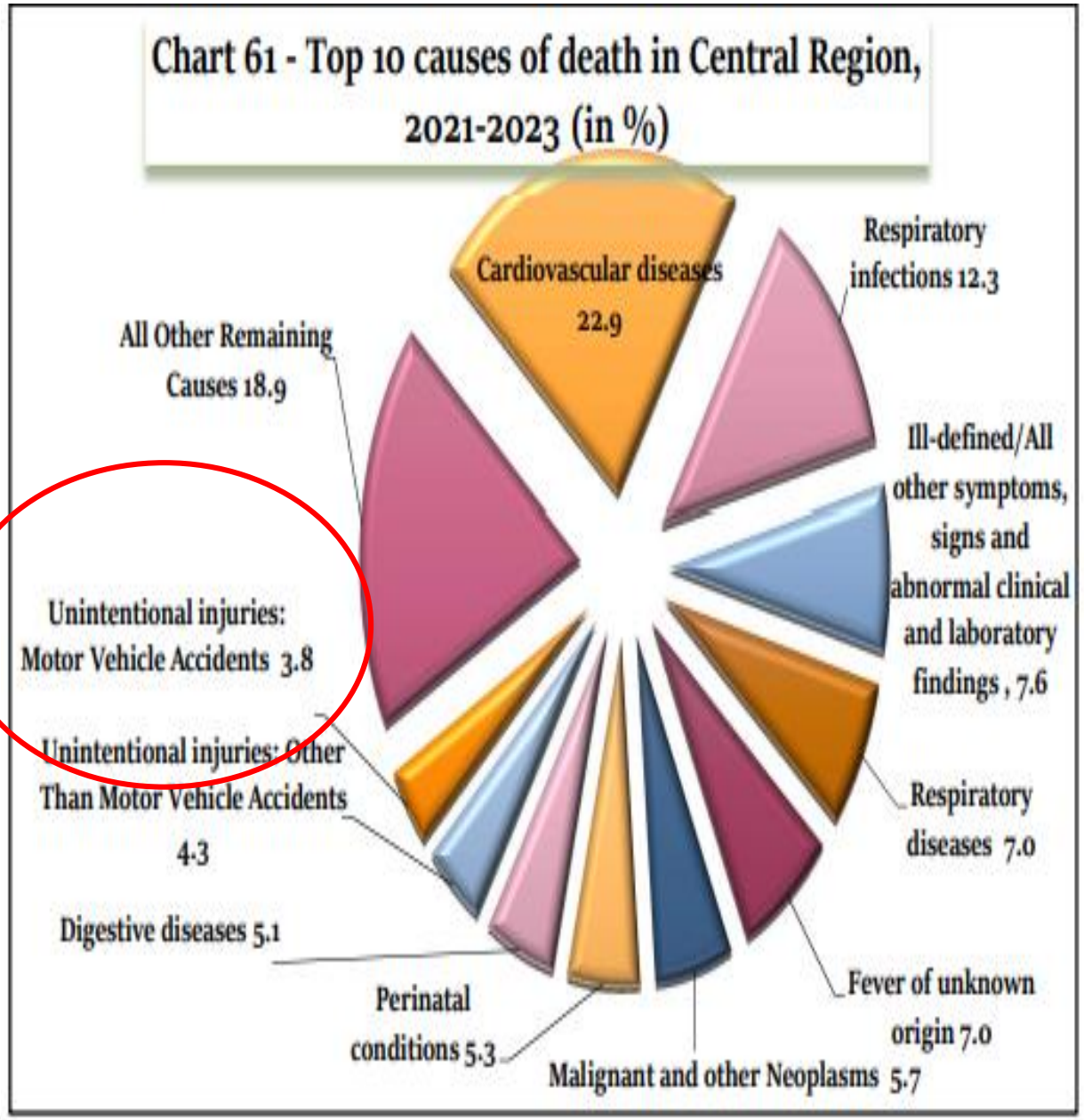
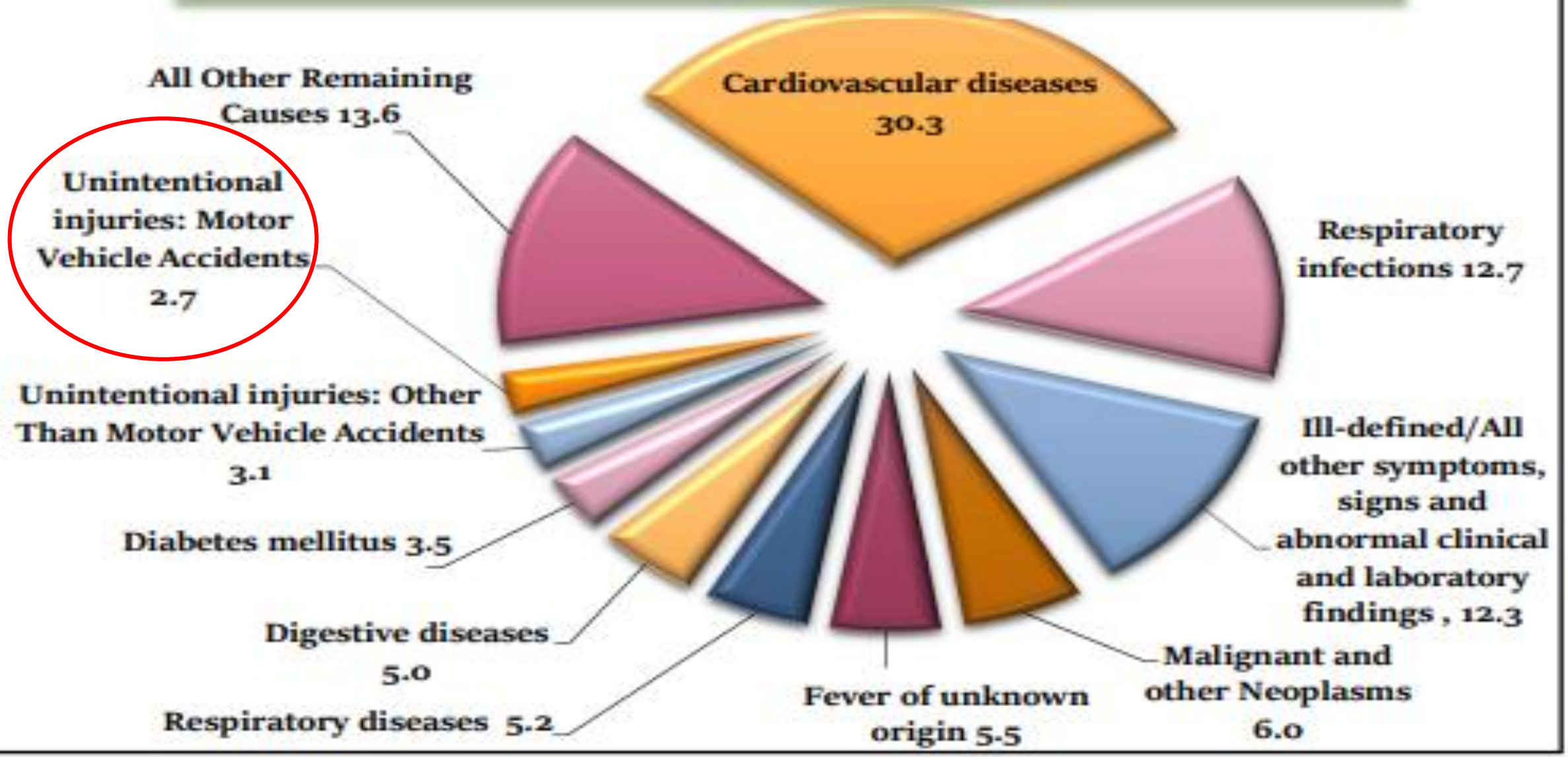


Chart 62 - Top 10 causes of death in Western Region, 2021-2023 (in %)



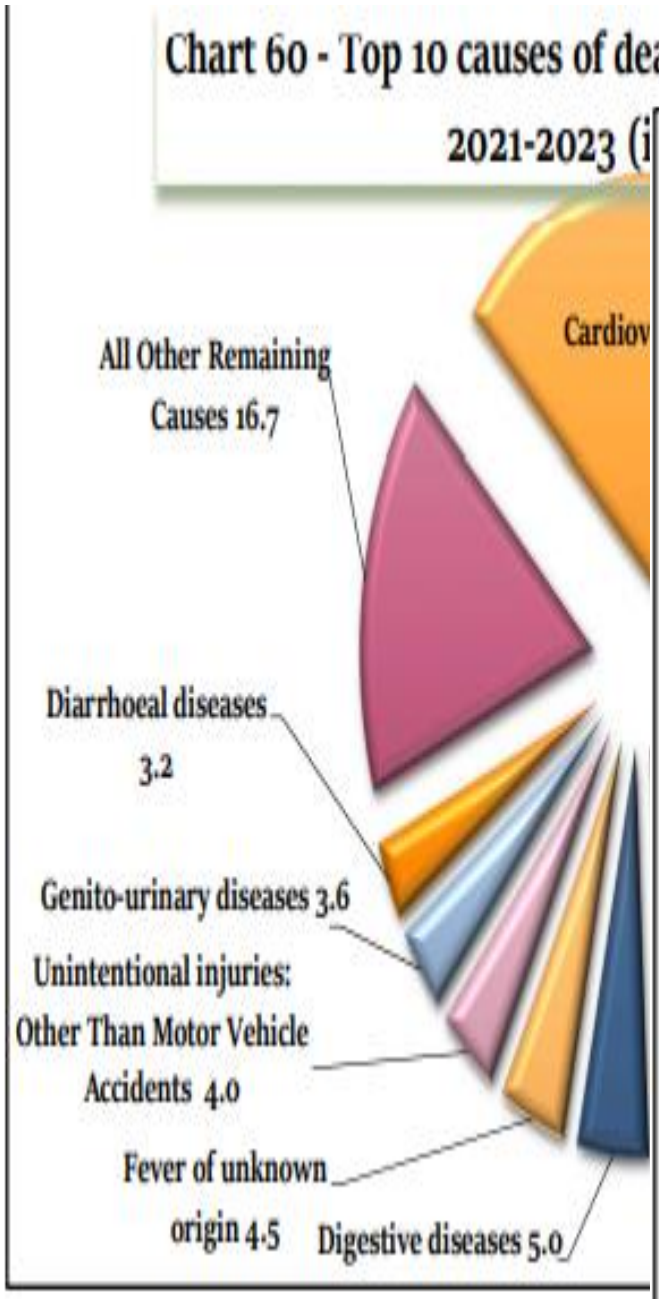


Chart 60 - Top 10 causes of death in Eastern Region,
2021-2023 (i
Cardiov
All Other Remaining Causes 16.7
Diarrhoeal diseases 3.2
Genito-urinary diseases 3.6
Unintentional injuries: Other Than Motor Vehicle Accidents 4.0
Fever of unknown origin 4.5
Digestive diseases 5.0

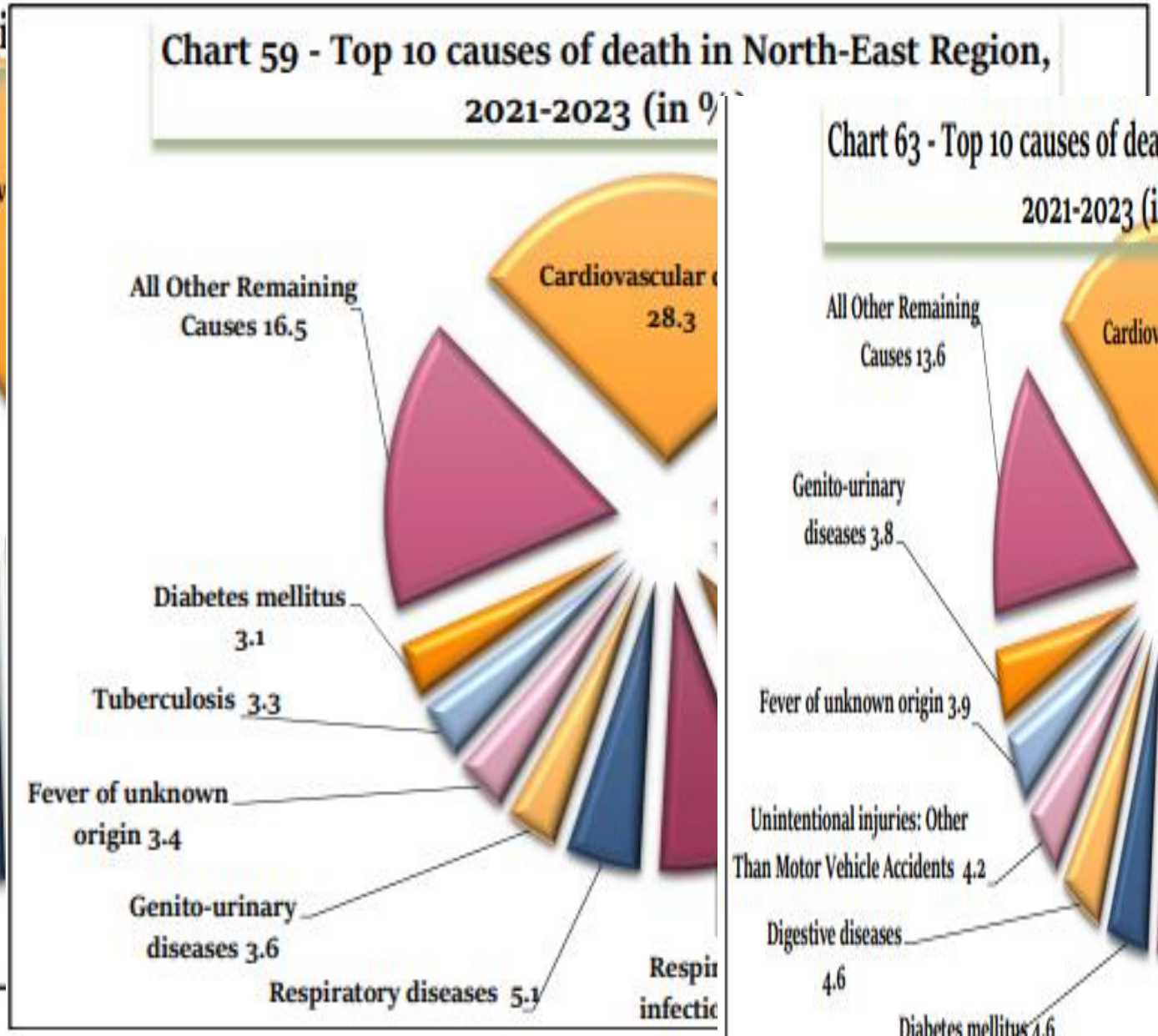


Chart 59 - Top 10 causes of death in North-East Region,
2021-2023 (in %
Cardiovascular
28.3
All Other Remaining Causes 16.5
Diabetes mellitus 3.1
Tuberculosis 3.3
Fever of unknown origin 3.4
Genito-urinary diseases 3.6
Respiratory diseases 5.1
Respi
infectio

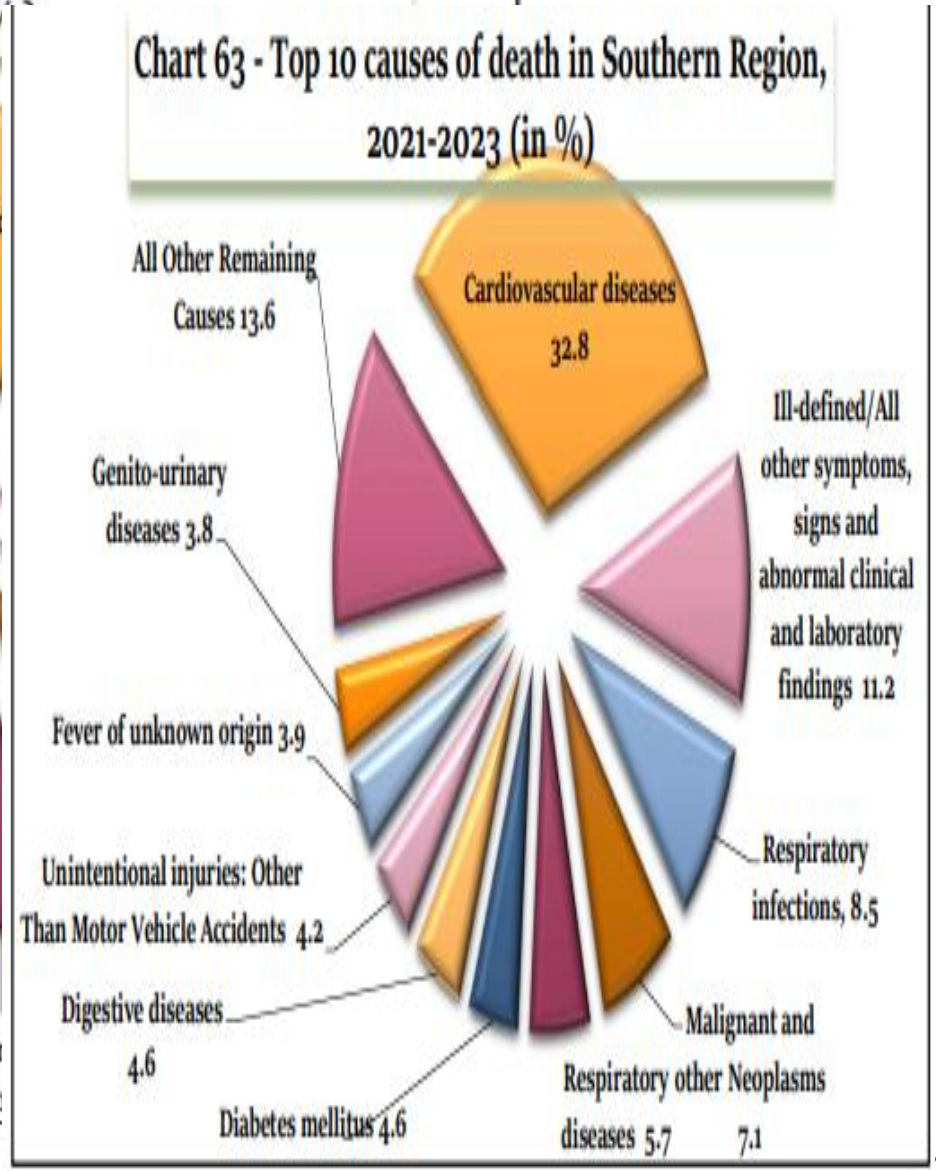


Chart 63 - Top 10 causes of death in Southern Region,
2021-2023 (in %)
All Other Remaining Causes 13.6
Cardiovascular diseases 32.8
Ill-defined/All other symptoms, signs and abnormal clinical and laboratory findings 11.2
Genito-urinary diseases 3.8
Fever of unknown origin 3.9
Respiratory infections, 8.5
Unintentional injuries: Other Than Motor Vehicle Accidents 4.2
Digestive diseases 4.6
Malignant and Respiratory other Neoplasms diseases 5.7
7.1
Diabetes mellitus 4.6

IS ROAD SAFETY FUND IN BUDGET?

MINISTRY OF ROAD TRANSPORT AND HIGHWAYS

DEMAND NO. 86

Ministry of Road Transport and Highways

Rs.3.10 LakhCr

	Actual 2024-2025			Budget 2025-2026			Revised 2025-2026			Budget 2026-2027		
	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total
Gross	21556.17	347660.74	369216.91	30047.98	332325.18	362373.16	30046.38	349972.49	380018.87	31276.46	378027.00	409303.46
Recoveries	*-7440.22*	*-62316.34*	*-69756.56*	*-14955.97*	*-60084.03*	*-75040.00*	*-14955.97*	*-77921.03*	*-92877.00*	*-15568.61*	*-83859.55*	*-99428.16*
Receipts	...	...	...	...	...	...	...	...	...	...	...	...
Net	**14115.95**	**285344.40**	**299460.35**	**15092.01**	**272241.15**	**287333.16**	**15090.41**	**272051.46**	**287141.87**	**15707.85**	**294167.45**	**309875.30**

Rs.9809.66 cr

Rs.5020 Cr

Rs.370 Cr

		Actual 2024-2025			Budget 2025-2026			Revised 2025-2026			Budget 2026-2027		
		Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total
4.02	Programme Component	...	1140.73	1140.73	...	1310.00	1310.00	...	[illegible]	[illegible]	...	[illegible]	[illegible]
4.03	EAP Component	...	3644.62	3644.62	...	2291.00	2291.00	...	1933.00	1933.00	...	1400.00	1400.00
4.04	Schemes of States financed from CRIF	8493.21	...	8493.21	9342.53	...	9342.53	9342.53	...	9342.53	9809.66	...	9809.66
4.05	Schemes of UTs financed from CRIF	138.61	111.62	250.23	194.42	396.06	590.48	194.42	396.06	590.48	204.00	416.00	620.00
[illegible]	Important Roads - Schemes financed from CRIF	...	[illegible]	[illegible]	...	[illegible]	[illegible]	...	[illegible]	[illegible]	...	[illegible]	[illegible]
4.07	Development, Planning, Quality Assurance, Research and Training - financed from CRIF	109.51	...	109.51	219.00	...	219.00	119.00	...	119.00	124.95	...	124.95
4.08	Maintenance of National Highways - financed from CRIF	4708.76	...	4708.76	4595.00	...	4595.00	4915.02	...	4915.02	5020.00	...	5020.00
4.09	Transfer to Central Road and Infrastructure Fund(CRIF)	7462.64	5232.15	12694.79	14350.95	1054.03	15404.98	14570.97	1069.03	15640.00	15158.61	441.39	15600.00
4.10	Met from Central Road and Infrastructure Fund(CRIF)	-7196.26	-5207.38	-12403.64	-14350.95	-1054.03	-15404.98	-14570.97	-1069.03	-15640.00	-15158.61	-441.39	-15600.00
4.11	Special Accelerated Road Development Program (SARDP) for North Eastern Areas	...	12372.99	12372.99	...	19499.09	19499.09	...	[illegible]	19499.09	...	[illegible]	[illegible]
4.12	Transfer to National Investment Fund(NIF)	...	8000.00	8000.00	...	11000.00	11000.00	...	[illegible]	10000.00	...	[illegible]	[illegible]
4.13	Met from National Investment Fund (NIF)	...	-7935.44	-7935.44	...	-11000.00	-11000.00	...	[illegible]	[illegible]	...	[illegible]	[illegible]
	Net	*13716.47*	*117248.83*	*130965.30*	*14350.95*	*101941.15*	*116292.10*	*14570.97*	*101766.17*	*116337.14*	*15158.61*	*106840.00*	*121998.61*
Road Transport and Safety													
5.	*Research, Training, Studies and Other Road Safety Schemes*												
5.01	Schemes financed from CRIF	199.66	9.11	208.77	565.02	30.00	595.02	345.00	15.00	360.00	370.00	30.00	400.00
5.02	Transfer to CRIF	243.80	10.00	253.80	565.02	30.00	595.02	345.00	15.00	360.00	370.00	30.00	400.00
5.03	Met from CRIF	-199.67	-9.11	-208.78	-565.02	-30.00	-595.02	-345.00	-15.00	-360.00	-370.00	-30.00	-400.00
	Net	*243.79*	*10.00*	*253.79*	*565.02*	*30.00*	*595.02*	*345.00*	*15.00*	*360.00*	*370.00*	*30.00*	*400.00*
6.	*Scheme on Women Safety*												
6.01	Scheme on Women Safety on Public Road Transport	[illegible]	...	[illegible]	[illegible]	...	[illegible]	[illegible]	...	[illegible]	[illegible]	...	[illegible]
6.02	Met from Nirbhaya Fund	-36.49	...	-36.49	-40.00	...	-40.00	-40.00	...	-40.00	-40.00	...	-40.00
	Net	...	...	...	...	...	...	...	...	...	...	...	...
Total-Road Transport and Safety		**243.79**	**10.00**	**253.79**	**565.02**	**30.00**	**595.02**	**345.00**	**15.00**	[illegible]	[illegible]	[illegible]	**400.00**


Meme Society


RELIANCE

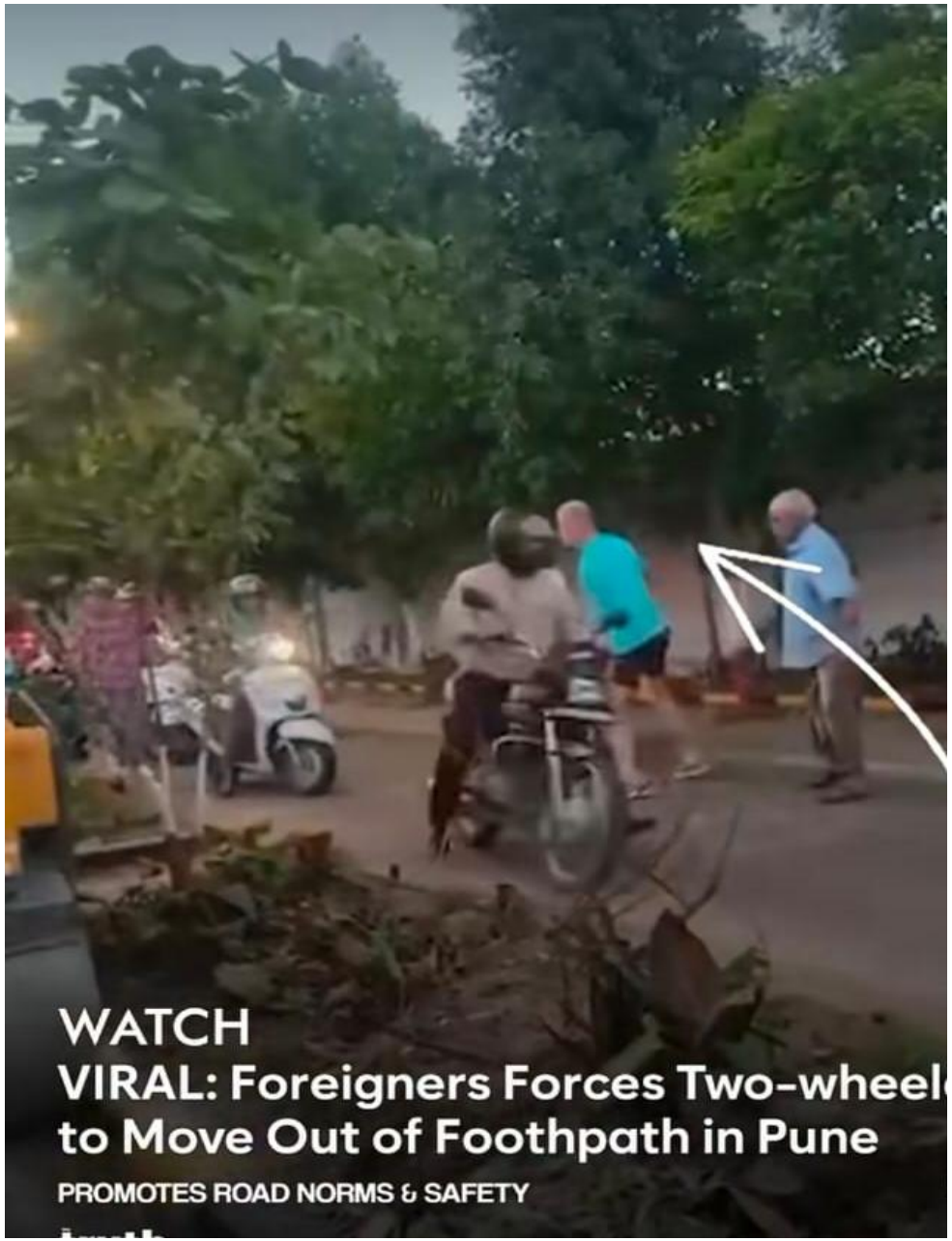

DEEN THAGA


NO PARKING


DECCAN PLASTIC


272


TOI
MP04ZS2299


WATCH
VIRAL: Foreigners Forces Two-wheel
to Move Out of Foothpath in Pune
PROMOTES ROAD NORMS & SAFETY


EXTREME DENSE FOG TRIGGERS
MULTI-VEHICLE CRASH IN UP
NDTV


தமிழன்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Search

THE HINDU

Supreme Court asks States, U.T.s to frame road safety rules within six months

Authorities have been directed to address aspects such as helmet compliance, lane discipline, and the use of dazzling LED headlights while framing the guidelines

Updated – October 08, 2025 02:17 am IST – NEW DELHI

The Court directed that all States and UTs must, within six months, frame and notify comprehensive road safety rules under:

Section 138(1A) — to regulate movement of pedestrians and non-mechanised traffic

Section 210-D — to prescribe standards for the design, construction, and maintenance of roads (other than national highways)

Supreme Court's directions on road safety(October 2025)

A Bench of Justices J.B. Pardiwala and K.V. Viswanathan issued wide-ranging directions to improve road and pedestrian safety across India, giving authorities about 6–7 months to comply. The orders were passed in the long-running road safety case *S. Rajaseekaran v. Union of India*.

Strict helmet enforcement

- Mandatory helmet use for both drivers and pillion riders.
- Use of cameras to catch violations.
- States/UTs must share data on:
  - Number of challans
  - License suspensions
  - Fines collected

Safer road design & monitoring

Authorities should use:

- Automated cameras
- Graduated fines
- Colored/textured lane markings (bus & cycle lanes)
- Dynamic lighting
- Rumble strips and tyre killers at conflict points
- Real-time dashboards for lane violations

Pedestrian-first approach

- Relying on Indian Roads Congress (IRC) guidelines:
- Prefer at-grade crossings (street-level) over foot overbridges/subways.
- Improve footpaths and crossings, especially in accident-prone areas.
- Audit footpaths in 50 major cities for safety gaps.
- Remove encroachments using:
  - Camera monitoring
  - Bollards/guardrails
  - GIS mapping & photo records

Headlights, strobes, hooters

- Set limits on headlight brightness and beam angles.
- Ban unauthorized red-blue strobe lights and illegal hooters.
- Run public awareness campaigns on these hazards.

Supreme Court's directions on road safety

A Bench of Justices J.B. Pardiwala and K.V. Viswanathan issued wide-ranging directions to improve road and pedestrian safety across India, giving authorities about 6–7 months to comply. The orders were passed in the long-running road safety case *S. Rajaseekaran v. Union of India*.

Focus on hotspots

- **Immediate priority: crossing near Delhi High Court–National Zoological Garden (Mathura Road).**
- **Traffic calming there within 7 months (signals/FOB/crossings).**
- **Busy junctions: actuated signals, audible cues, better signage.**

Legal accountability

- **Use Section 198A, MV Act to hold officials/contractors personally liable for deaths due to bad road design.**

States/UTs must frame rules under:

- **Section 138(1A) (regulating access/activities of pedestrians & non-mechanised vehicles)**
- **Section 210-D (road design/maintenance standards for non-NH roads)**

Grievance redressal

- **PWDs, municipalities and NHAI must set up systems for complaints on:**
- **Footpaths**
- **Pedestrian crossings**

Include a review/appeal mechanism.

Despite significant efforts by Government and NGOs, fatalities remain high.

With ₹3.10 lakh crore investment and multiple initiatives, why do crashes persist?

Are our roads consistently safe for all users?

Are mistakes and violations inevitable in road use?

If human error is inevitable, how can systems reduce harm?

Are our roads designed to tolerate mistakes and discourage violations?

If government, NGOs, and policies exist… why did even the Supreme Court issue directions on road safety?

Have Engineering, Enforcement, Education, and Emergency care initiatives from 2019 to 2025 translated into sustained fatality reduction?”

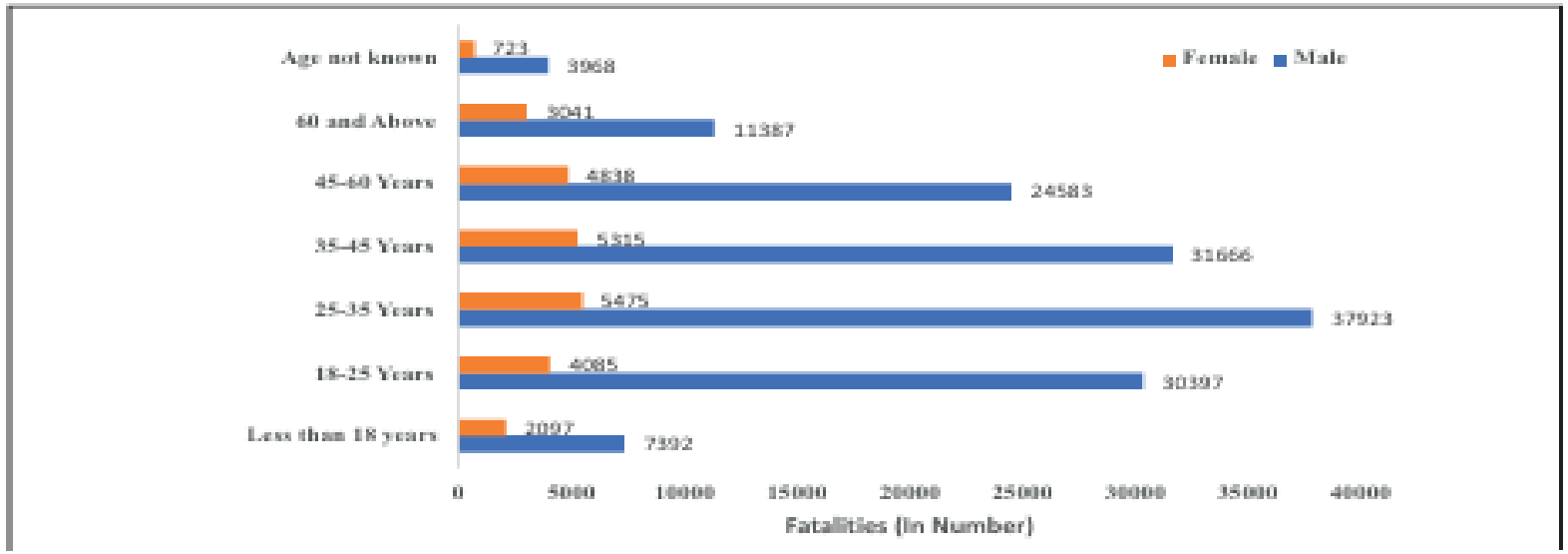
News / Business / In first six month of 2025, over 29,000 die in national highway accidents, more than 50% of last year: Govt data

Premium

In first six month of 2025, over 29,000 die in national highway accidents, more than 50% of last year: Govt data

National highways in India account for over 30% of road accident deaths, even though they comprise only 2% of

Chart 4.5: Gender-wise age profile number of fatal road accident victims during 2023



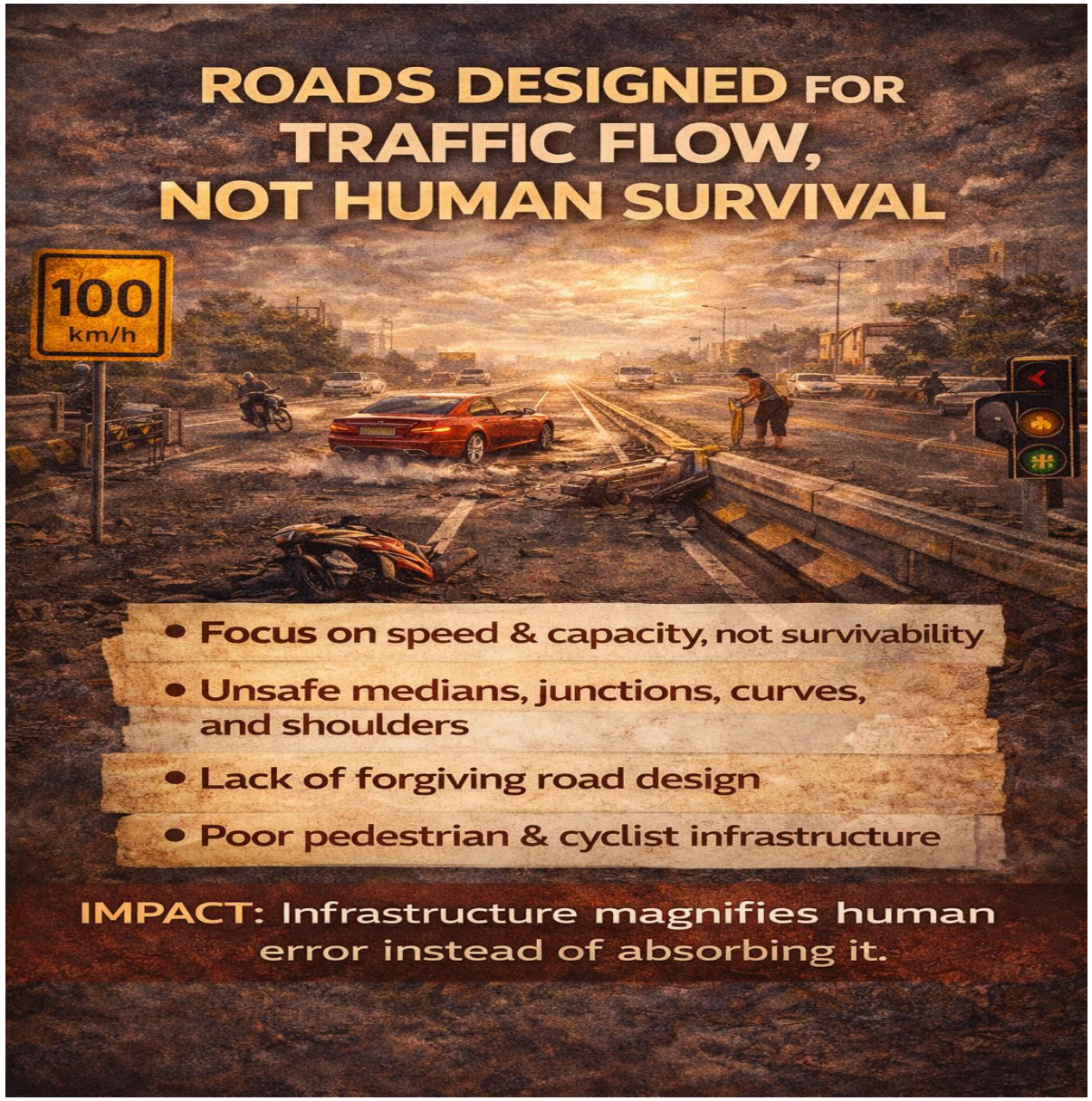
why do pedestrians, cyclists , children, Two wheelers remain the most vulnerable road users?

How long can we blame over speeding, no helmets ,no seat belts, drunk and drive etc..

Table 2.11: Road user category-wise Road Accident and Deaths on NH in 2023

Category	2022		2023		% Change	
	Accident	Death	Accident	Death	Accident	Death
Pedestrians	20,513	10,160	19,992	11,180	-2.5	10
Bicycles	3,003	1,445	2,719	1,335	-9.5	-7.6
Two Wheelers	63,115	25,228	62,598	26,801	-0.8	6.2
Auto Rickshaws	6,038	2,324	5,060	1,972	-16.2	-15.1
Cars,Taxis,Vans	29,005	10,174	30,994	10,564	6.9	3.8
Trucks/Lorries	13,619	5,572	13,651	5,274	0.2	-5.3
Buses	5,268	1,798	5,267	1,596	-0.02	-11.2
Others	11,436	4,337	9,896	4,390	-13.5	1.2
Total	1,51,997	61,038	1,50,177	63,112	-1.2	3.4

What holds us back from zero fatalities



UNSAFE OPERATING SPEEDS & WEAK SPEED MANAGEMENT

- High speeds on highways through habitations
- Poor enforcement of speed limits
- Speed limits not matched to road design
- Lack of speed-calming engineering

IMPACT: Speed remains the biggest fatality multiplier.

TWO-WHEELER DOMINANCE & VULNERABLE ROAD USERS (VRUs)

- Two-wheelers = 75–80% of vehicles
- Poor helmet compliance
- No segregated lanes
- High exposure of pedestrians & cyclists

IMPACT: High risk with minimal protection.

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REACTIVE APPROACH INSTEAD OF PROACTIVE SAFETY

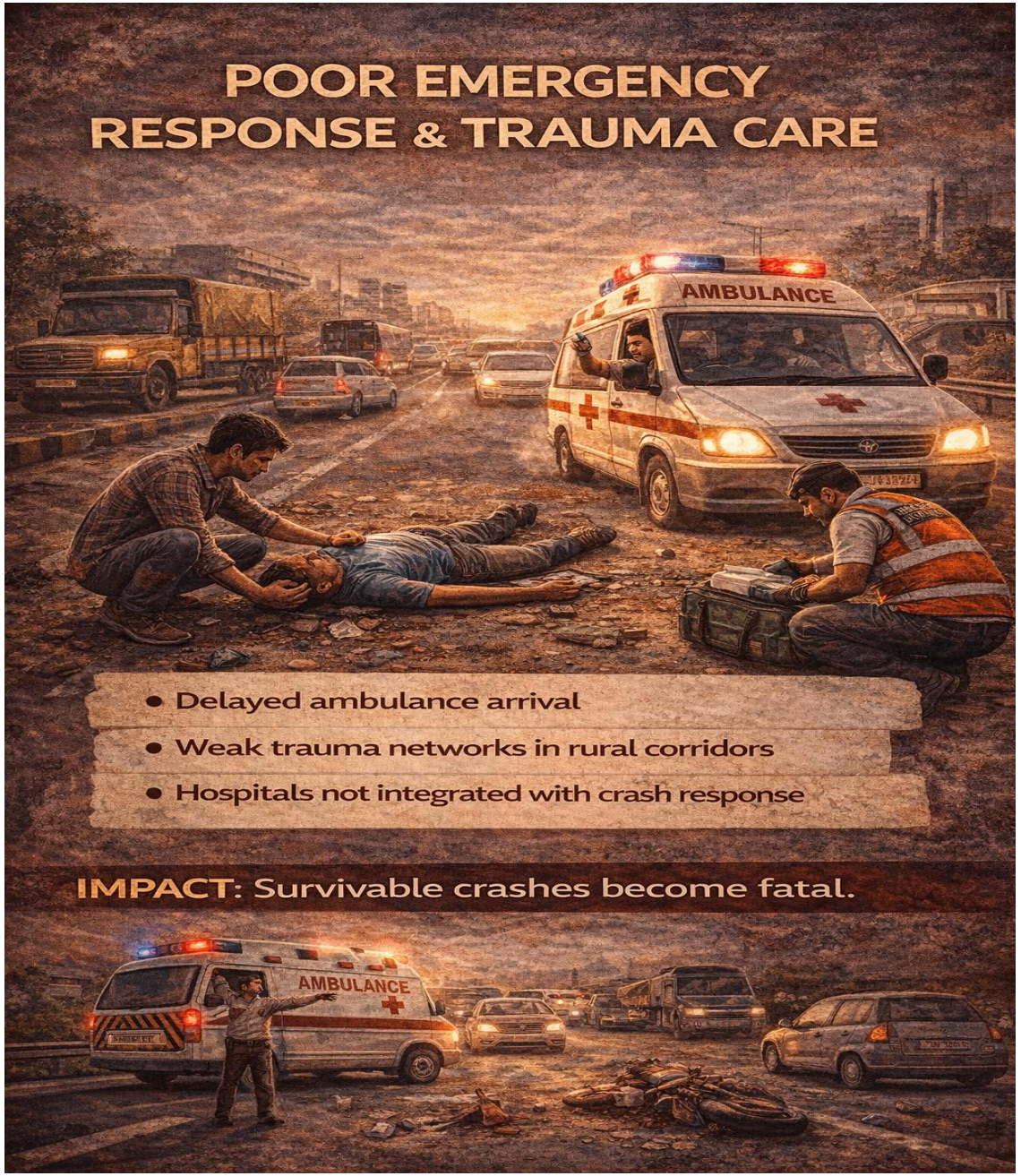
- Fixing black spots after deaths occur
- Safety treated as corrective, not preventive
- No lifecycle safety responsibility in PPP projects

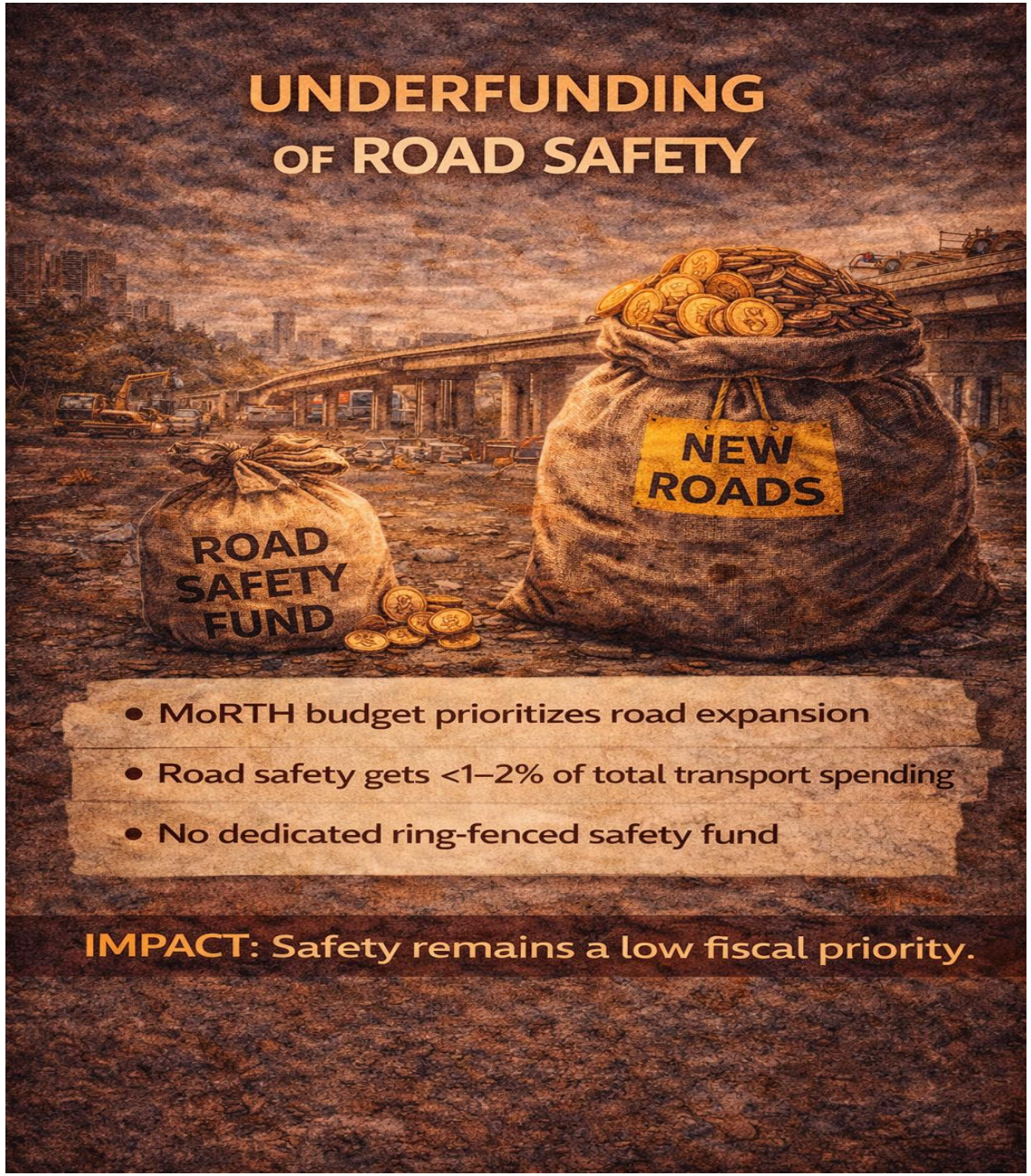
IMPACT: Deaths drive policy — not risk prediction.

WEAK ENFORCEMENT & MANPOWER DEPENDENCY

- Manual policing instead of automated enforcement
- Corruption & inconsistent penalties
- Poor detection of repeat offenders

IMPACT: Low deterrence value of traffic laws.


POOR EMERGENCY RESPONSE & TRAUMA CARE
AMBULANCE
• Delayed ambulance arrival
• Weak trauma networks in rural corridors
• Hospitals not integrated with crash response
IMPACT: Survivable crashes become fatal.
AMBULANCE

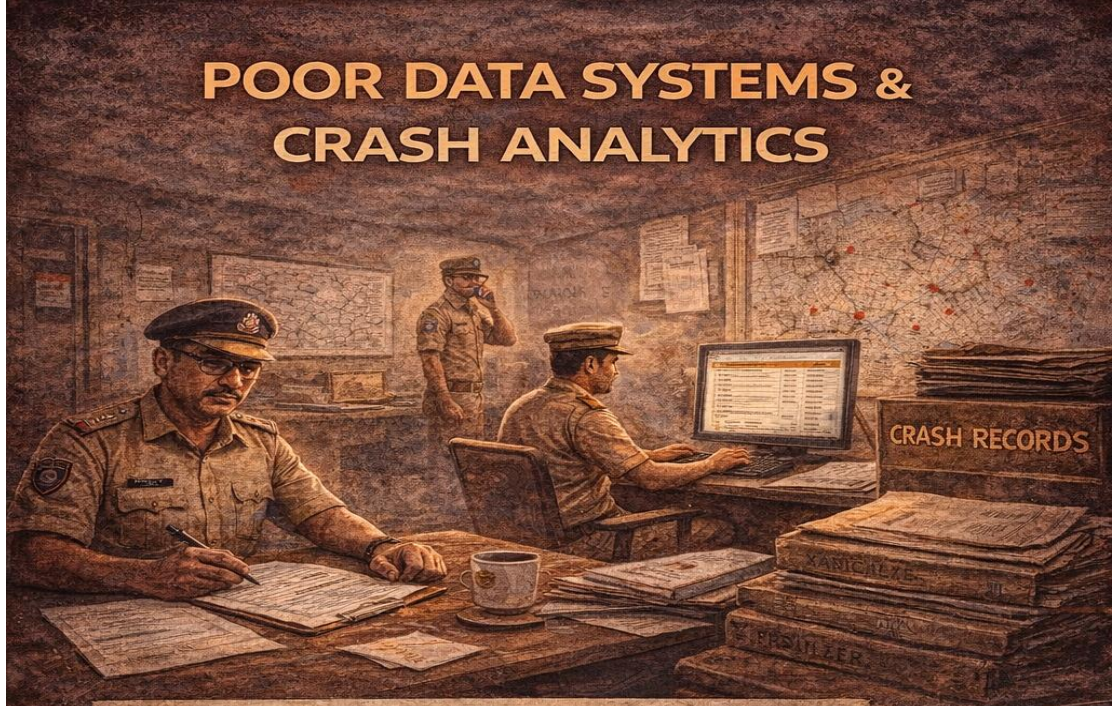

UNDERFUNDING OF ROAD SAFETY
ROAD SAFETY FUND
NEW ROADS
• MoRTH budget prioritizes road expansion
• Road safety gets <1–2% of total transport spending
• No dedicated ring-fenced safety fund
IMPACT: Safety remains a low fiscal priority.

WEAK ACCOUNTABILITY IN PPP & HIGHWAY CONTRACTS

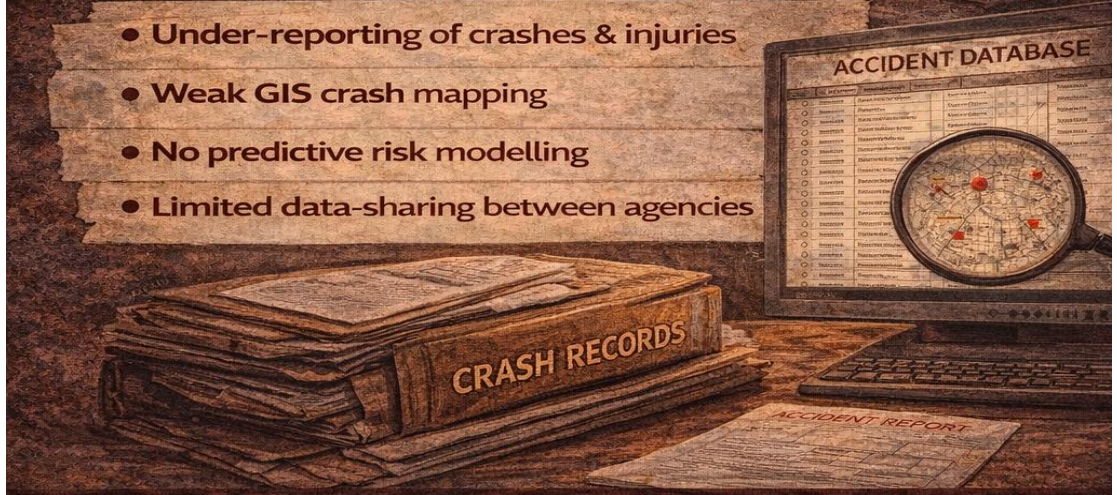
- **Contractors** paid for asset delivery — not safety outcomes
- **No penalty** or bonus linked to fatality reduction
- **Safety audits** lack enforcement power

IMPACT: No financial incentive to save lives.

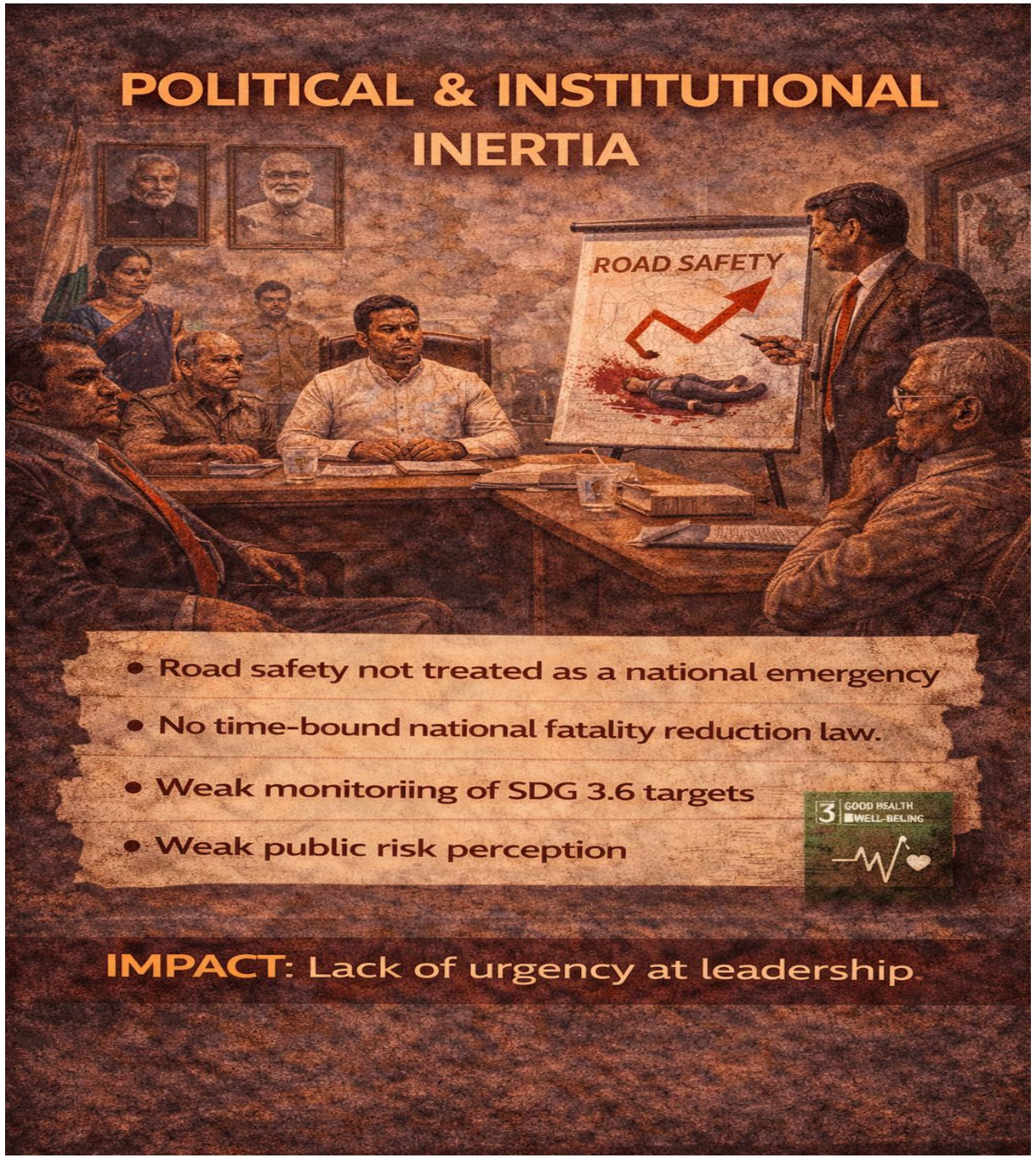
POOR DATA SYSTEMS & CRASH ANALYTICS

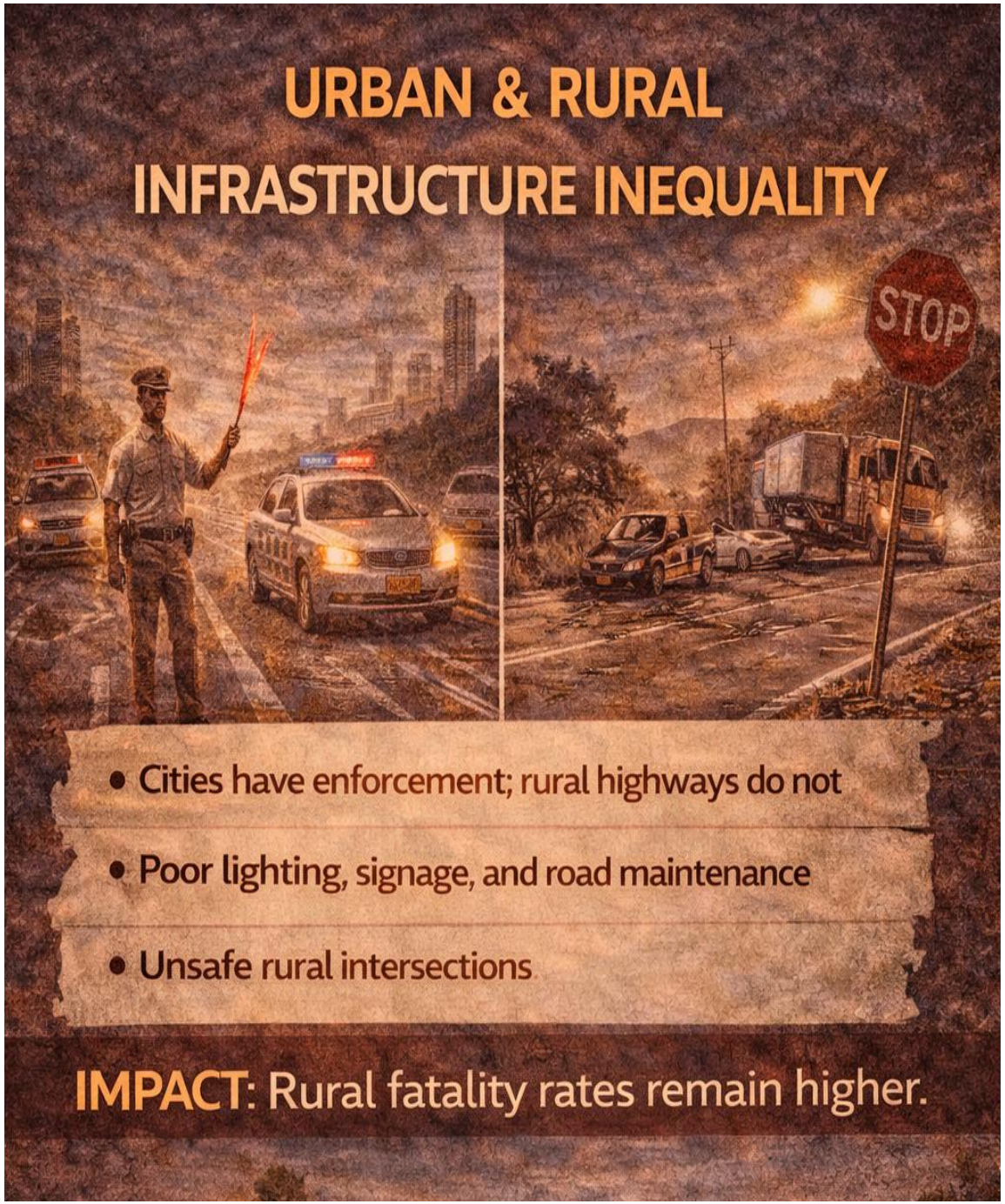


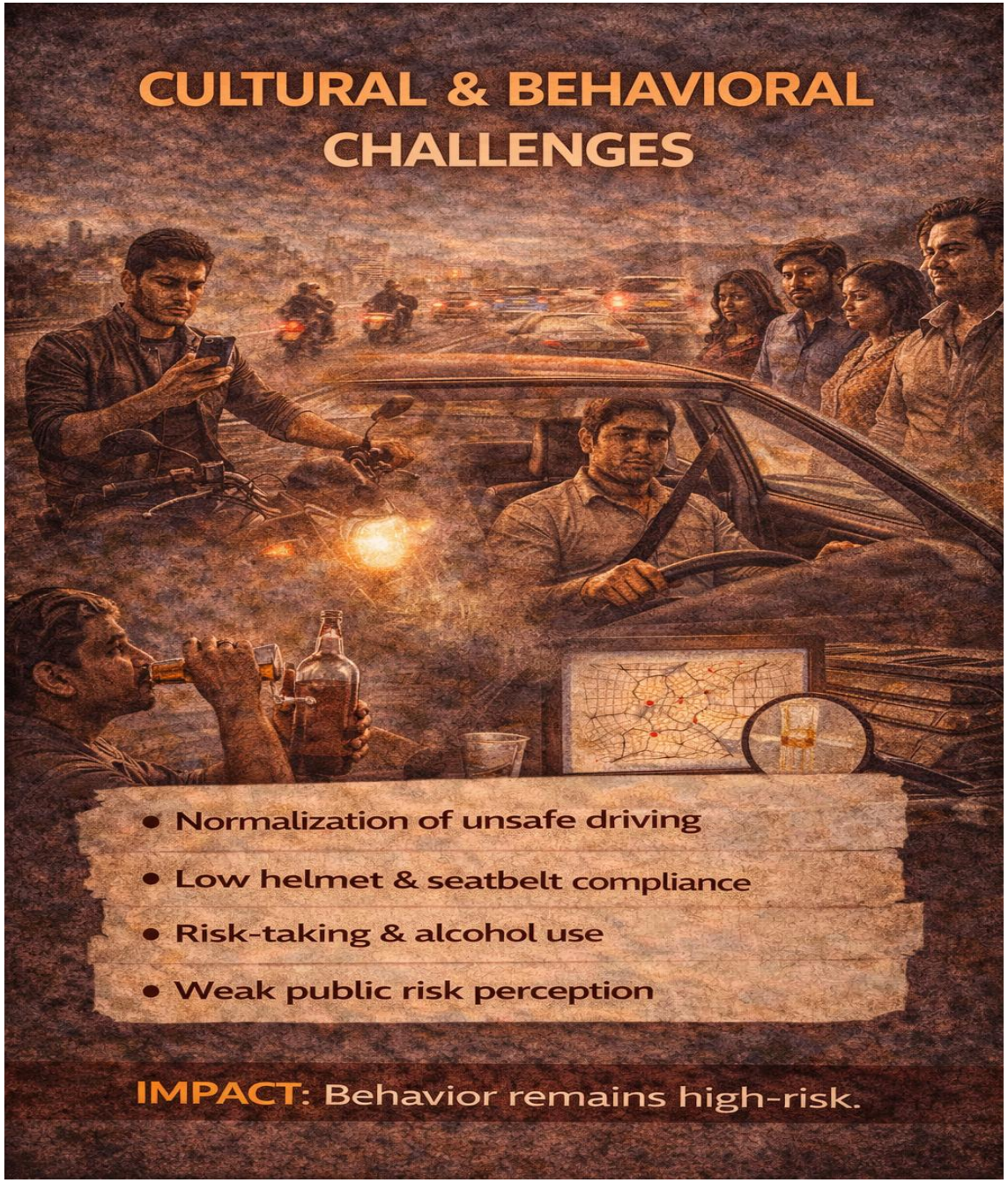
- **Under-reporting** of crashes & injuries
- **Weak GIS** crash mapping
- **No predictive risk** modelling
- **Limited data-sharing** between agencies

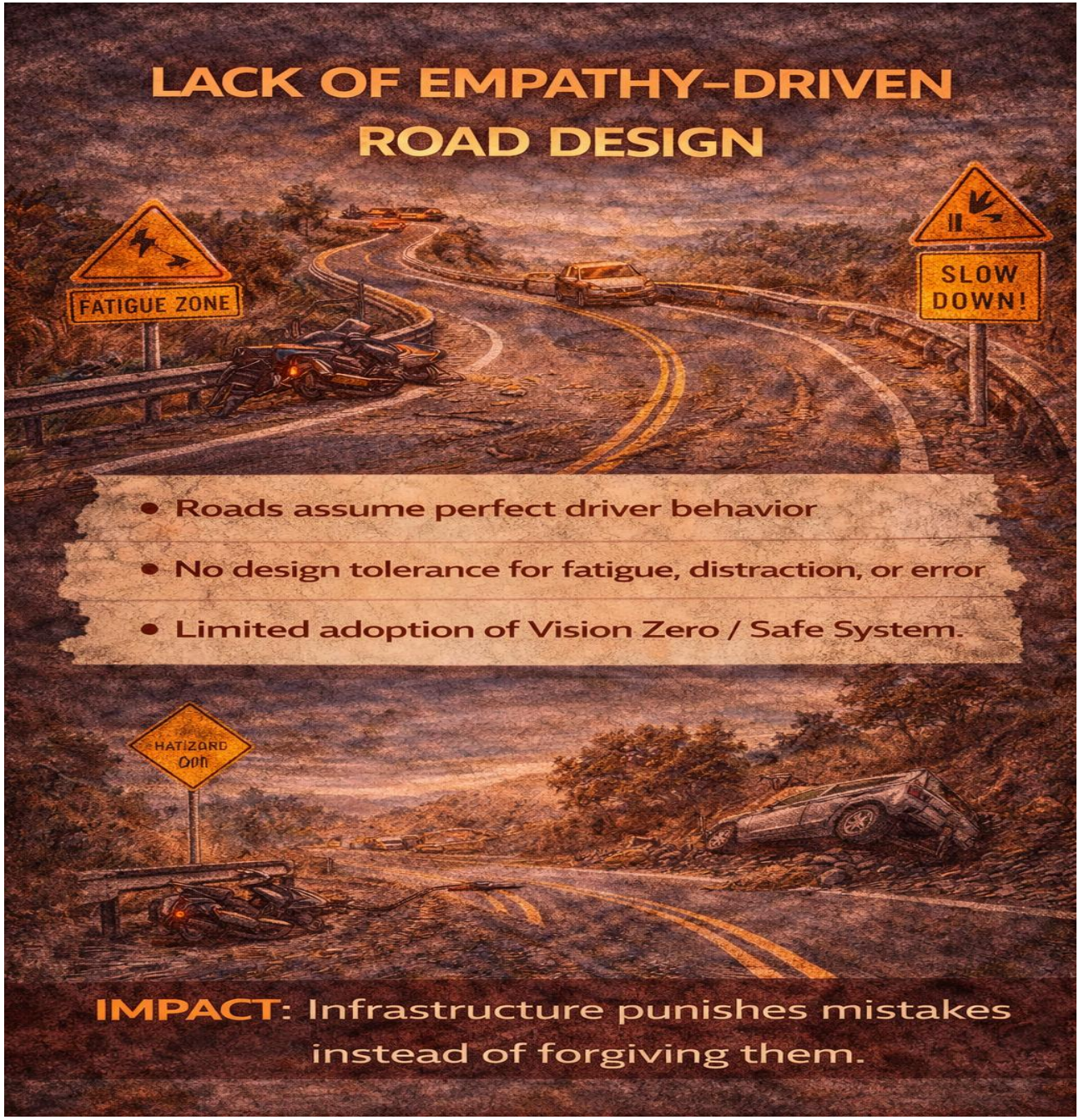


IMPACT: Decisions made without evidence.


POLITICAL & INSTITUTIONAL INERTIA
ROAD SAFETY
• Road safety not treated as a national emergency
• No time-bound national fatality reduction law.
• Weak monitoriing of SDG 3.6 targets
• Weak public risk perception
3 GOOD HEALTH AND WELL-BEING
IMPACT: Lack of urgency at leadership


URBAN & RURAL INFRASTRUCTURE INEQUALITY
STOP
• Cities have enforcement; rural highways do not
• Poor lighting, signage, and road maintenance
• Unsafe rural intersections
IMPACT: Rural fatality rates remain higher.


CULTURAL & BEHAVIORAL CHALLENGES
• Normalization of unsafe driving
• Low helmet & seatbelt compliance
• Risk-taking & alcohol use
• Weak public risk perception
IMPACT: Behavior remains high-risk.


LACK OF EMPATHY–DRIVEN ROAD DESIGN
FATIGUE ZONE
SLOW DOWN!
• Roads assume perfect driver behavior
• No design tolerance for fatigue, distraction, or error
• Limited adoption of Vision Zero / Safe System.
IMPACT: Infrastructure punishes mistakes instead of forgiving them.

What Is Empathy in Road Safety?

Empathy in road safety means designing, managing, and enforcing roads by putting ourselves in the place of real road users, especially the most vulnerable and building systems that protect them even when they make mistakes.

In simple terms:

“If I were a child,

elderly person,

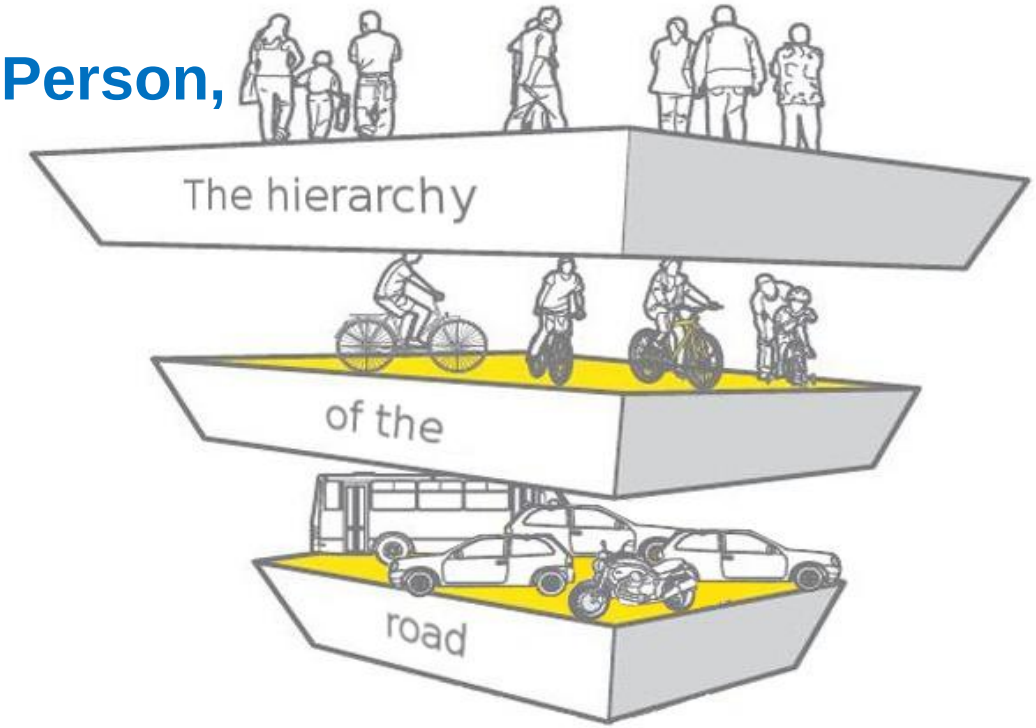
Physically Challenged Person,

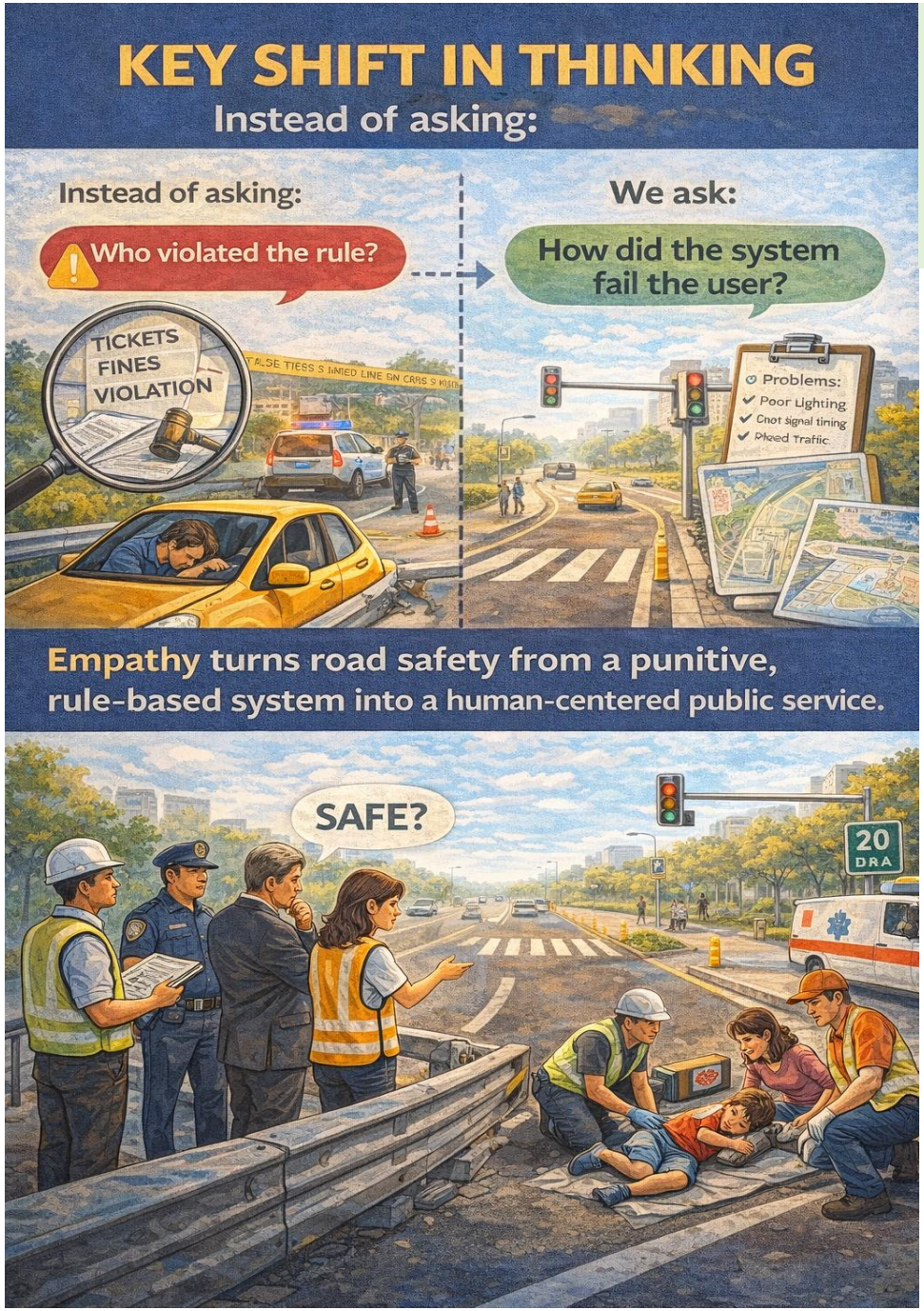
pedestrian, cyclist,

or tired driver

would this road

feel safe?”





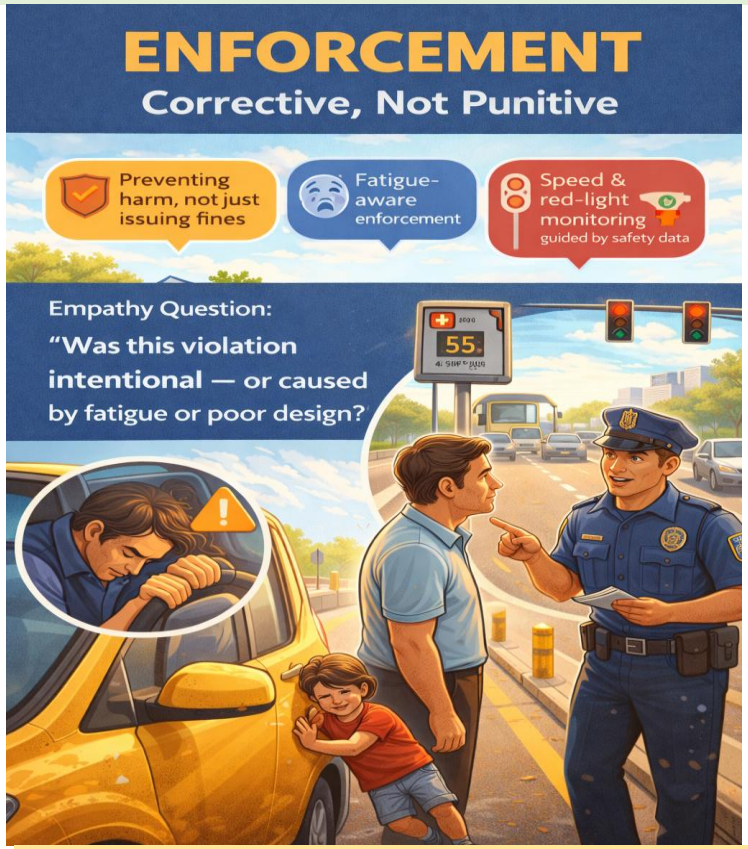
Why Empathy in Road Design

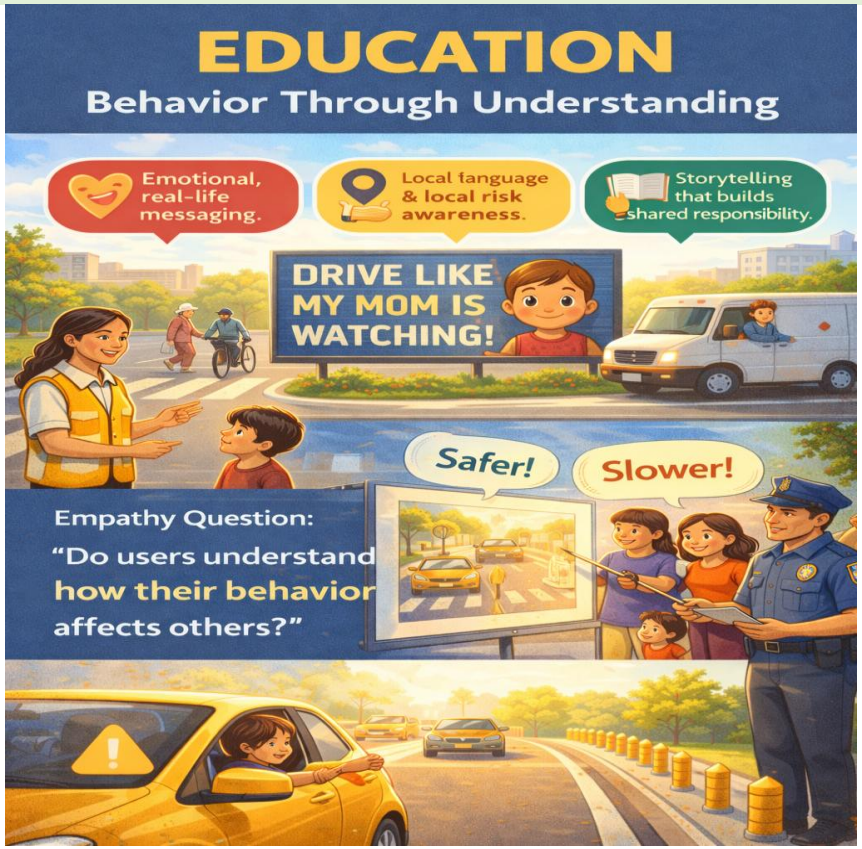
When empathy guides engineering decisions:

1. **Forgiving road designs replace harsh, error-punishing layouts**
2. **Clear signage & markings reduce mental overload**
3. **Traffic calming protects vulnerable users**
4. **Lighting, rest areas, and safe crossings quietly save lives**

The goal is not only to prevent violations and mistakes, but to build systems that protect people when mistakes happen.

PPP-Based Empathy Framework (Policy + Enforcement + Education)





Policy Instruments

Mandatory Safe System & Forgiving Road principles in DPRs

VRU-first design standards (crossings, refuge islands, service roads)

Contractual KPIs linked to injury reduction, not just asset uptime

Independent Road Safety Audits at all lifecycle stages

PPP Role

Speed enforcement, red-light cameras, ANPR systems

Data analytics to identify repeat high-risk behaviour

Blackspot monitoring and rapid emergency response

PPP Role

VRU-focused awareness campaigns

School and community programs near high-risk corridors

Driver sensitization on sharing roads with pedestrians and cyclists

Vulnerable Road User (VRU) Empathy Model

VRUs-include:

- Pedestrians
- Cyclists
- Children
- Elderly
- Persons with disabilities
- Two-wheeler riders

Exposure
More time unprotected

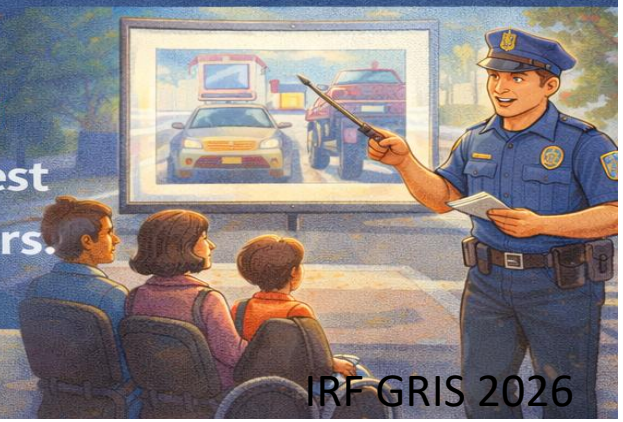
Perception
Poor visibility, confusing roads

Response Time
Slower reactions, fewer escape options

Consequence
Higher risk of death or serious injury

Empathy Question:

"The least protected users pay the highest price for small errors."



Empathy-Based Design Actions (Examples)

Problem	Empathy-Based Solution
High-speed crossings	Raised zebra crossings, refuge islands
Poor night visibility	Continuous lighting, reflective markings
Mixed traffic	Segregated lanes, traffic calming
Elderly & children	Longer signal timing, simpler layouts
Driver fatigue	Rest bays every 40–50 km
School zones	Permanent traffic calming
Bus stops	Safe shelters, aligned crossings
Rain & fog risks	Anti-skid surfaces, dynamic warnings
Crash severity	Forgiving roadside barriers Faster emergency response

Post-crash delays:

Post-crash delays: Faster emergency response

Empathy as an Institutional System (Not Optional)

The document argues that empathy must be:

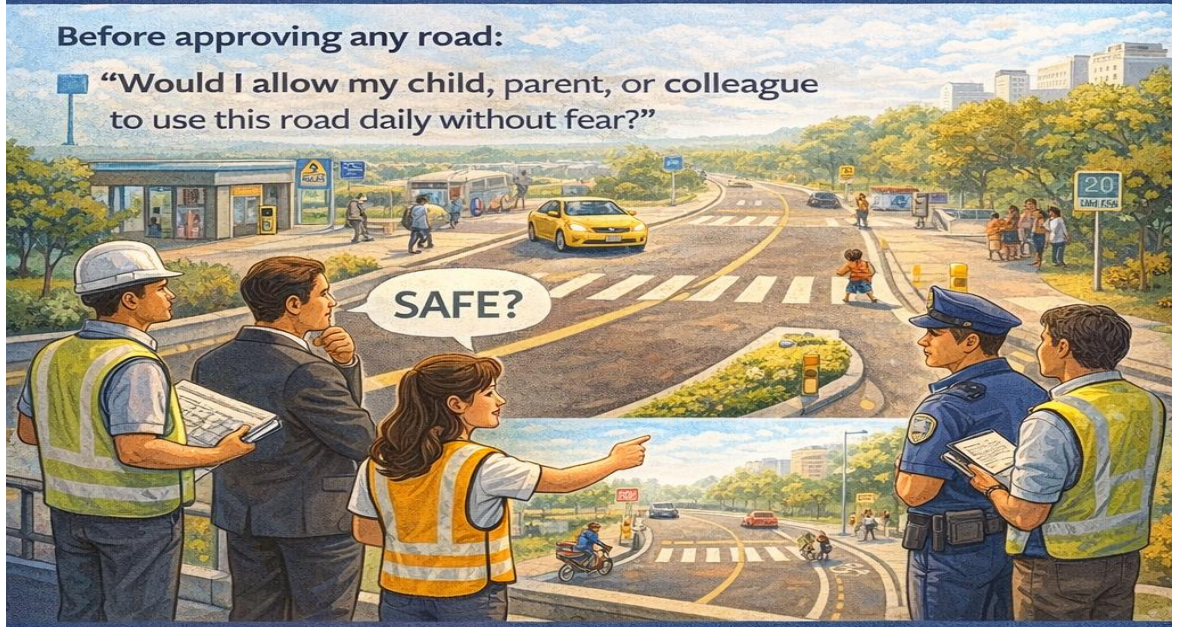
- Embedded in contracts, audits, and KPIs
- Built into PPP road projects
- Linked to financial incentives and safety performance

Goal Roads should protect life even when people behave imperfectly.

The Empathy Test for Engineers & Policymakers

Before approving any road:

"Would I allow my child, parent, or colleague to use this road daily without fear?"

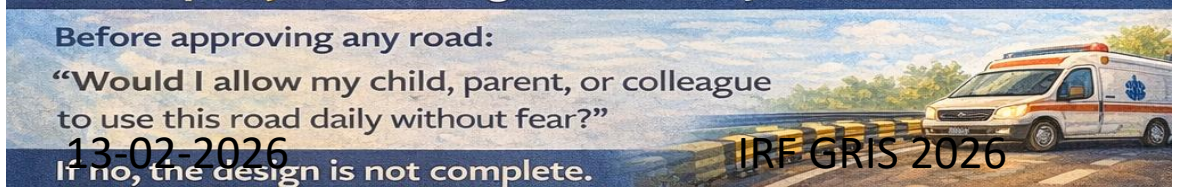


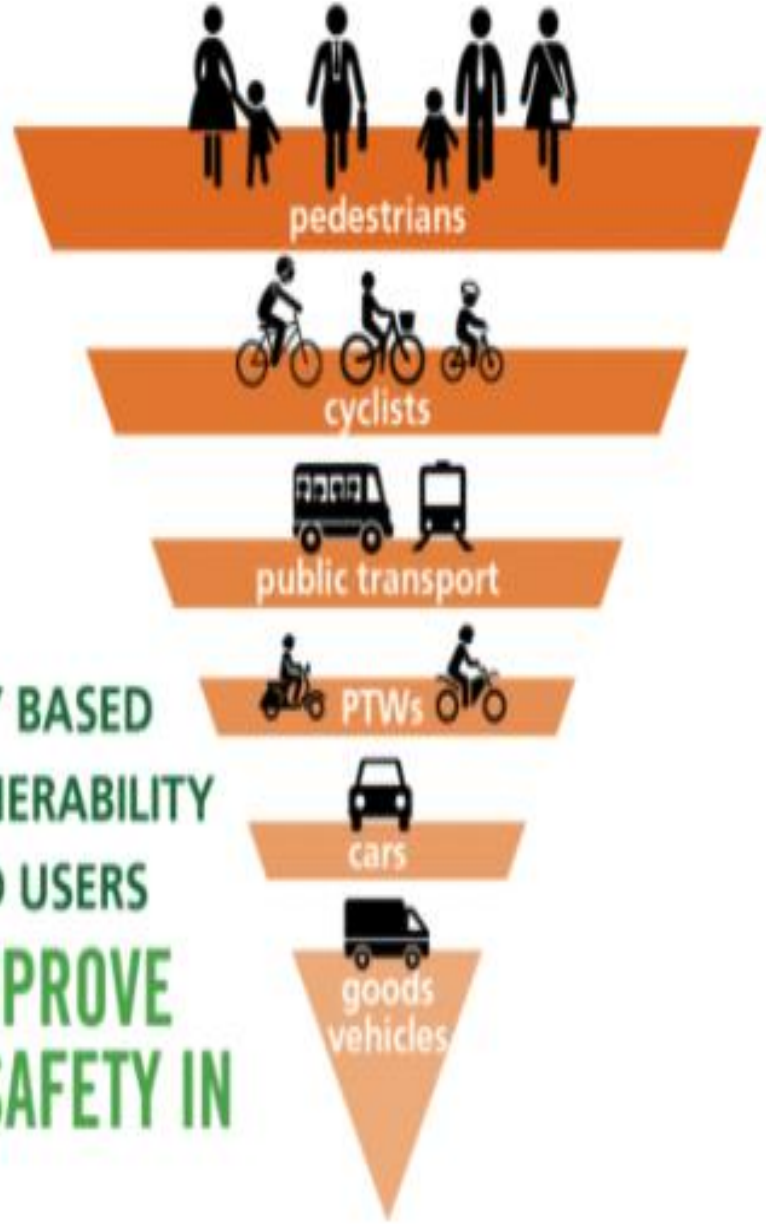
The Empathy Test for Engineers & Policymakers

Before approving any road:

"Would I allow my child, parent, or colleague to use this road daily without fear?"

If no, the design is not complete.





MODAL PRIORITY BASED ON VULNERABILITY OF ROAD USERS CAN IMPROVE ROAD SAFETY IN CITIES

Road safety improves not when users behave perfectly,

but when systems protect users when they don’t.

Pedestrian Waiting-Time Empathy

Night-Time Visibility Empathy

Fatigue Empathy for Truck & Bus Drivers

Two-Wheeler Empathy at Intersections

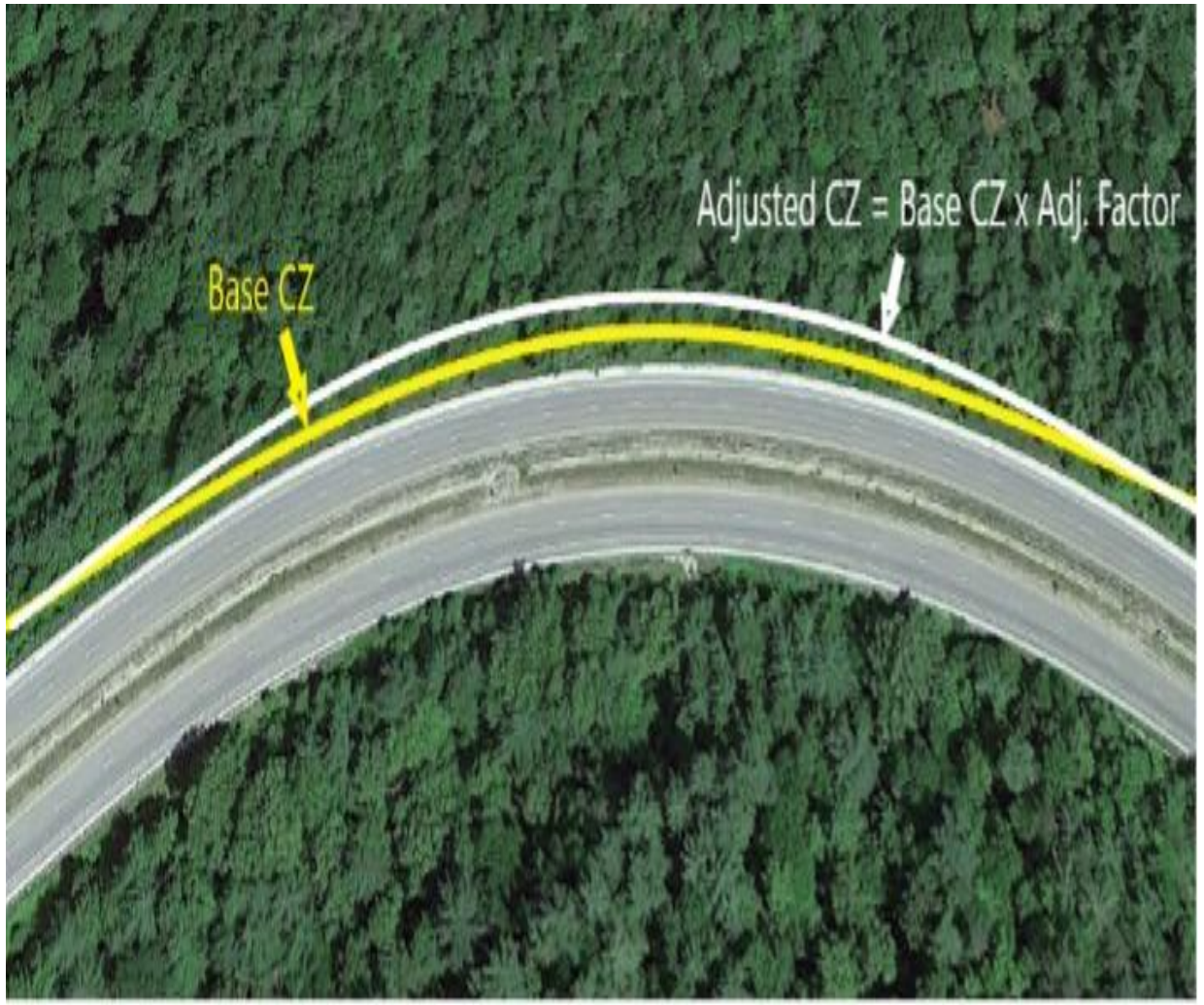
School-Zone Empathy

Bus Stop Empathy

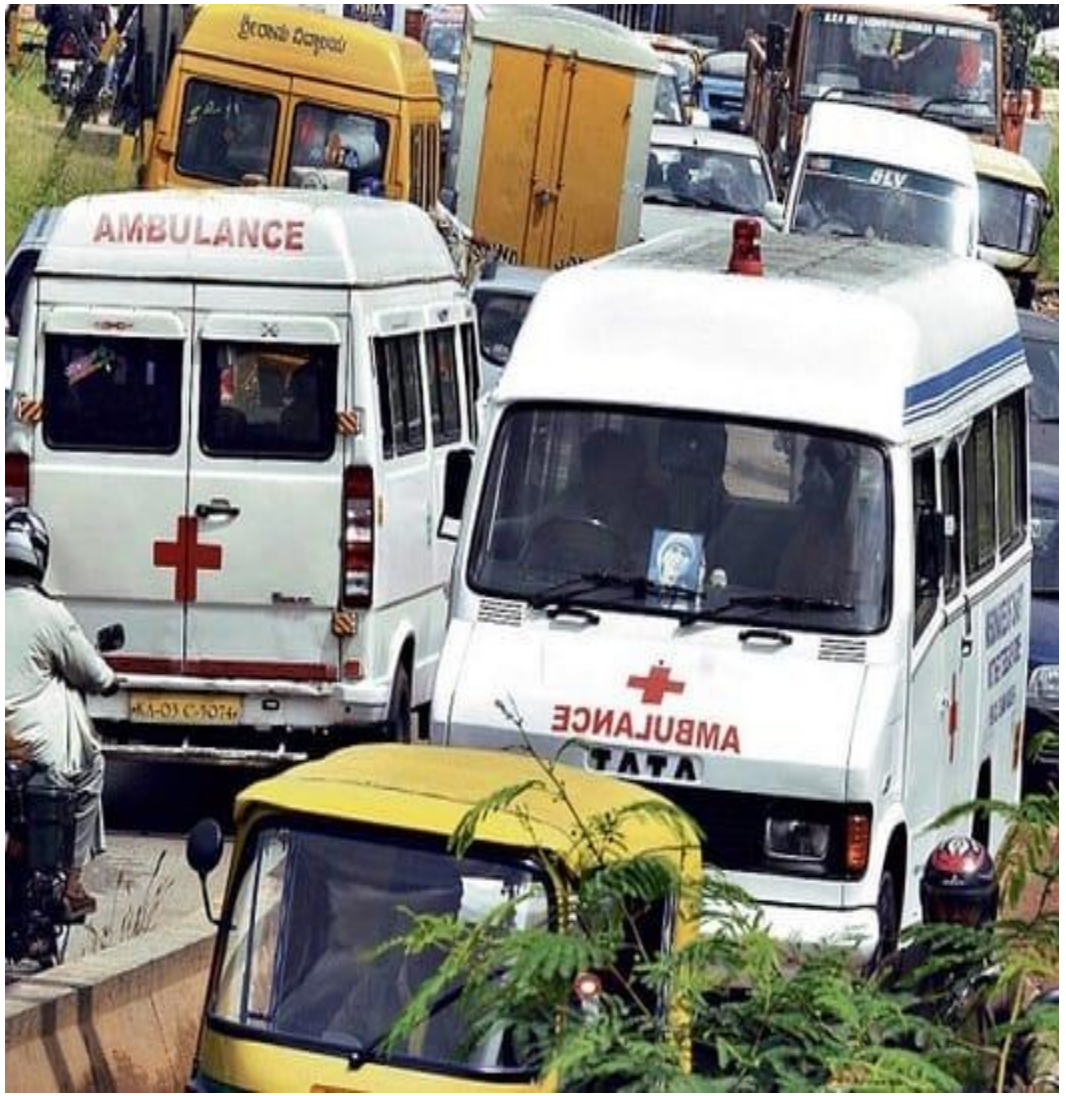
Rain & Weather Empathy

Elderly & Disabled Empathy

Forgiveness Empathy in Design



Post-Crash Empathy



Humans will make mistakes. Some will violate rules. A safe system does not ignore this reality .it designs protection around it. That is the philosophy of empathy-driven roads

Pedestrians, cyclists, and children remain victims not because they are careless, but because our systems are still vehicle-centric. A safe system must protect those with the least protection. That is the foundation of empathy-driven road design.

To operationalize empathy in road safety, we propose a Public–Private Partnership model called the Empathy-Driven Design–Build–Road Safety Hybrid Annuity Model (E-DBRS HAM)

Empathy Driven-DBRS-HAM Model for Road Safety

CORE PHILOSOPHY

Road users are human and will make mistakes.

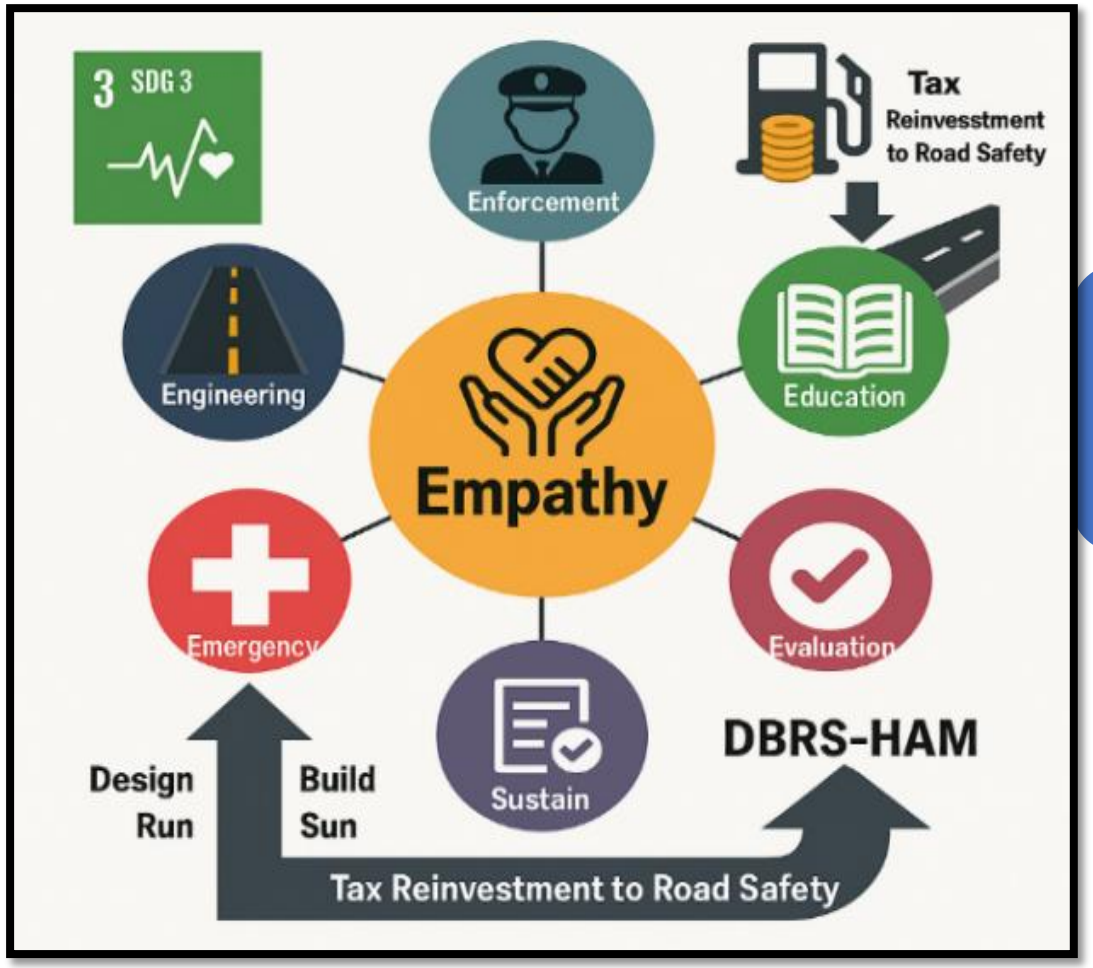
Road safety systems must anticipate human error and reduce its consequences.

Vulnerable Road Users (VRUs) suffer the highest harm despite contributing least to risk.

Safety performance shall be measured by risk and severity reduction, not only by rule compliance.

Empathy shall be embedded as a measurable performance obligation under DBRS–HAM contracts.

STRUCTURE OF E-DBRS -HAM



- Design & Construction
- Operation & Maintenance
- Safety Outcomes (Fatality and injury reduction)

OBJECTIVES OF THE PROPOSED MODEL

Design and Build Safer Infrastructure:	**To enhance road safety through geometric improvements, systematic rectification of identified black spots, and installation of appropriate crash barriers and medians to reduce both crash occurrence and severity.**
Rectification of Safety Hazards:	**To eliminate non-forgiving roadside elements and introduce self-explaining road design principles that intuitively guide road user behaviour and minimise the likelihood of human error.**
Enforcement Support and Integration:	**To strengthen compliance through technology-enabled monitoring, identification of repeat high-risk violators, and structured coordination with traffic police agencies, while retaining statutory enforcement authority.**
Education and Awareness:	**To implement targeted education programmes for vulnerable road users (VRUs), complemented by community awareness initiatives and school-level road safety interventions.**
Emergency Response Enhancement:	**To improve post-crash outcomes by enabling rapid incident detection, coordinated emergency response, and seamless integration with ambulance services and trauma care facilities.**
Evaluation and Empathy-Based Governance:	**To institutionalise continuous improvement through KPI-based safety audits, accessibility assessments, human-centred design considerations, and systematic incorporation of road user feedback into safety planning.**

Scope of the Model

Component	Scope
Engineering / Design	Black spot rectification, crash barriers, forgiving medians, junction improvements,
Enforcement	Speed cameras, ANPR, red-light detection, repeat-violator monitoring
Education	Behavioural awareness campaigns, Vulnerable Road User & school programs
Emergency	Incident response vehicles, ambulance readiness, hospital linkage
Evaluation	Data dashboards, quarterly KPI reporting, annual audits
Empathy	Forgiving roads, self-explaining roads, Dedicated lanes for two wheelers and bus fleets. Pedestrian/cyclist safety, universal accessibility, fatigue mitigation, Trauma care.
Access Control	Warning & temporary restriction for repeat high-risk violators (Police-approved)

KEY PERFORMANCE INDICATORS

1.VRU PROTECTION KPI	• **Measure annual reduction in pedestrian, cyclist, child, elderly, PwD, and two-wheeler fatalities and serious injuries.** • **Establish a baseline year for VRU crash data.** • **Set minimum annual reduction targets (%).** • **Assign highest KPI weightage to VRU safety performance.**
2. PEDESTRIAN DELAY & COMFORT KPI	• **Limit pedestrian waiting time at signalized crossings to a maximum of 90 seconds during peak hours.** • **Provide refuge islands, lighting, shade, and clear markings at crossings.** • **Audit pedestrian stress and comfort annually through third-party surveys.**
3. NIGHT-TIME & LOW-VISIBILITY SAFETY KPI	• **Maintain continuous street lighting at settlements, junctions, bus stops, and crossings.** • **Ensure retro-reflective signs, markings, studs, and zebra crossings are fully functional.** • **Achieve a minimum 98% asset functionality rate with rectification within 48 hours.**
4. FATIGUE & LONG-HAUL DRIVER SAFETY KPI	• **Provide rest bays and lay-bys at intervals of 40–50 km along the corridor.** • **Ensure lighting, toilets, parking, and security at rest areas.** • **Monitor correlation between rest-area availability and heavy-vehicle crash reduction.**

KEY PERFORMANCE INDICATORS

5. TWO-WHEELER SAFETY KPI

- Provide advanced stop lines for two-wheelers at signalized intersections.
- Ensure skid-resistant surfacing and smooth pavement at junctions.
- Provide safe turning pockets and predictable lane layouts.

6. SCHOOL & SENSITIVE ZONE SAFETY KPI

- Identify schools, hospitals, markets, and high pedestrian activity zones.
- Implement permanent traffic calming and speed control measures in such zones.
- Adopt a zero-fatality target for notified school zones.

7. FORGIVING ROAD DESIGN KPI

- Remove, shield, or make breakaway all rigid roadside obstacles.
- Provide energy-absorbing crash barriers and clear recovery zones.
- Monitor crash severity trends and aim for a year-on-year reduction in fatal crashes.

8. POST-CRASH RESPONSE & GOLDEN HOUR KPI

- Provide incident detection systems and emergency response vehicles.
- Ensure average emergency response time does not exceed 15 minutes.
- Ensure hospital handover time does not exceed 60 minutes.

KPI SCORING & PAYMENT LINKAGE

Score	Rating	Payment Impact
≥ 95	Excellent	+2% bonus
85–94	Good	Full payment
75–84	Acceptable	5% deduction
65–74	Poor	10% deduction in Performance security
< 65	Unsatisfactory	15% deduction + Authority will be answerable

Total Empathy KPI score shall be 100 points.

Minimum acceptable score shall be 75 points.

Link annuity and O&M payments to Empathy KPI scores.

Applying performance bonuses or deductions based on score bands.

When safety becomes a measurable performance indicator, private players treat it as a deliverable not an optional value

ILLUSTRATION

Project Overview
Corridor Length: 50 km
Contract Period: 3 Years
Payment Cycle: Every 6 Months (6 cycles)
Total Project Cost: ₹100 Cr

Component	% Share	Amount	Payment Method
Design + Civil Improvements	60%	₹60 Cr	Paid for work completed (no KPI deduction)
Maintenance & Safety O&M	40%	₹40 Cr	KPI-linked semi-annual annuity

ILLUSTRATION….

KPI	Max Score
VRU Fatalities	25
School Zone Fatalities	15
Pedestrian Waiting	10
Lighting	10
Helmet Compliance	8
Severity Reduction	10
Response Time	10
Rest Areas	5
Rectification	4
User Perception	3
Total	100

KPI SCORE STRUCTURE

KPIa	Unit	Full Score Condition	Reduction Rule	Max Score
VRU Fatalities	No. of deaths	0 fatalities	−12.5 points per fatality	25
School Zone Fatalities	No.	0 fatalities	Any 1 fatality → score = 0	15
Pedestrian Waiting Time	Seconds	≤90 sec	−1 point per +10 sec above 90	10
Lighting Functionality	% working	≥98%	−1 point per 2% drop	10
Helmet Compliance	%	≥95%	−1 point per 5% drop	8
Crash Severity Reduction	% reduction	≥30%	−1 point per 5% less reduction	10
Emergency Response Time	Minutes	≤15 min	−1 point per +2 min delay	10
Rest Area Availability	% coverage	100%	−1 point per 10% shortfall	5
Audit Rectification	Days	≤30 days	−1 point per +10 days delay	4
User Safety Perception	% positive	≥80%	−1 point per 10% drop	3

ILLUSTRATION….

“Each six months, every KPI is scored. The sum gives a safety score out of 100. That score directly decides the annuity payment. As safety improves, payment improves.”

Cycle	VRU	School	Waiting time	Light	Helmet	Severity	Response	Rest	Rectification	Perception	Total Score	Pay %	₹ Paid
6–12 m	0	0	5	5	4	5	5	3	2	1	30	90%	₹6.0 Cr
12–18 m	12.5	15	7	7	6	5	7	3	2	1	65	90%	₹6.0 Cr
18–24 m	12.5	15	7	7	6	7	7	3	3	2	69	90%	₹6.0Cr
24–30 m	25	15	10	10	6	7	10	4	4	2	93	95%	₹6.34 Cr
30–36 m	25	15	10	10	8	10	10	5	4	3	100	100+2%	₹7.0 Cr
Final	25	15	10	10	8	10	10	5	4	3	100	100+2%	₹7.0 Cr

INDEPENDENT EMPATHY AUDIT

- Conduct annual Empathy-Based Road Safety Audits by an independent agency.
- Audit shall include VRU walkthroughs, pedestrian delay measurements, and user perception surveys.
- Audit findings shall be binding for corrective action.

THE EMPATHY TEST (MANDATORY)

- Prior to issuance of the Completion / Safety Certification, the Authority and the Independent Auditor shall ensure and certify that the Project Road is safe and secure for travel by all categories of road user.

OUTCOME STATEMENT

- The DBRS–HAM project shall be considered successful only when it demonstrably reduces death, injury, fear, and user stress on the corridor.
- Empathy-based KPIs shall ensure that infrastructure functions as a **human-centred public safety service**, not merely a traffic facility.

What Is New in the Empathy-Driven DBRS-HAM PPP Model?

Safety Becomes the Primary Contract Objective — Not a Secondary Feature

Introduction of Empathy as the Sixth Pillar of Road Safety

Creates a single accountable safety authority

Enforces forgiving and self explaining road design

Speed becomes engineered-down, not just policed

Creates segregated two-wheeler & cycle lanes

Outcome-Based Payments Linked to Fatality Reduction

Lifecycle Safety Responsibility - Not One-Time Construction

Ambulance response time built into contract KPIs

Independent Empathy Audits & Mandatory "Empathy Test"

Financial Incentives & Penalties for Safety Performance

Integration of 6 E's in One PPP Contract

What Is New in the Empathy-Driven DBRS-HAM PPP Model?

Dedicated Road Safety Funding Architecture (Parallel to PPP Payments)
Access-Control Measures for High-Risk Repeat Violators
Safety KPIs Cover Psychological Safety - Fear, Stress, Comfort
Shift from Blame Culture to System Accountability
Brings safety equity
Changes mindsets, not just rules
India-Specific Vision Zero Model
Transforming PPP Roads into "Zero Fatality Corridors"

This PPP model is new because it legally transforms private road developers into life-saving system operators - where financial success is achieved on reducing deaths, not just building roads.

Road Map for Zero Road Fatalities in India

— Empathy-Driven DBRS-HAM Framework —

1. Reframing the Problem

- Safe System / Vision Zero Principles
- Empathy as the 6th "E"
- Lives Saved, Not Roads Built

2. Empathy-Driven Engineering

- Forgiving Road Design
- Safe Medians & Junctions
- Pedestrian & Cyclist Safety

3. DBRS-HAM Reform

- Safety-Linked Contracts
- Annuity Payments Tied to KPIs
- Rectification & Maintenance

4. Institutional Integration

- Highway Authority & DRSCs
- Concessionaire Accountability
- Police & Health Coordination


5. Outcome-Linked Funding
Fuel Cess & Toll Allocation
Black-Spot Elimination
Vulnerable User Protection
6. Performance & Risk
Fatality Reduction KPIs
Speed & Emergency Metrics
Safety Audits & Payments
7. Pilot & Scale-Up
Pilot on High-Risk Roads
2–3 Years Monitoring
Nationwide Expansion
Aligned with SDG 3.6, SDG 9, SDG 11, SDG 16 & SDG 17

DO WE STOP HERE?
IS THIS A CONCLUSION?
I REQUEST THIS FORUM TO TAKE IT FURTHER
LETS ACHIEVE ALL THE VISIONS

THANK YOU