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# RISK FACTORS OF ROAD SAFETY

The topic will discuss the different behavioral risk factors affecting both drivers and road users. The enforcement challenges and solutions will also be discussed.



# ROAD SAFETY MANAGEMENT: PREPARING YOUR LGU

RISK FACTORS CAN BE:

## MODIFIABLE & NON-MODIFIABLE

- Age & sex
- Socioeconomic status
- Drug abuse (alcohol)
- Neglect of safety devices
- Behavioral issues

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## WHAT CAN WE DO?

- STUDY RISK FACTORS
- PREVENT
- RESPOND
- REHABILITATE/MANAGE

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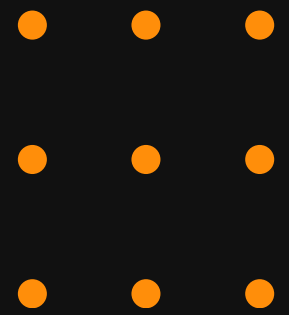


UNDERSTANDING RISK  
FACTORS IS KEY TO  
PREVENTION.

TYPES OF PREVENTION

- Primary Prevention
- Secondary Prevention
- Tertiary Prevention





# RISK FACTORS FOR ROAD TRAFFIC INJURIES

## EXPOSURE TO RISK

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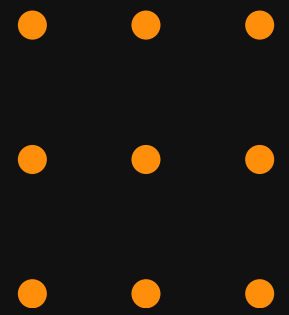
- Non-modifiable risk factors: age and sex
- Economic factors
- Road design
- Increase motorization
- Speeding
- Vulnerable road users

## CRASH INVOLVEMENT

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- Driver Factors: drunk & drug-driving; use of mobile phone while driving; and, driver fatigue
- Vehicle factors
- Road design: inadequate visibility





# RISK FACTORS FOR ROAD TRAFFIC INJURIES

## CRASH SEVERITY

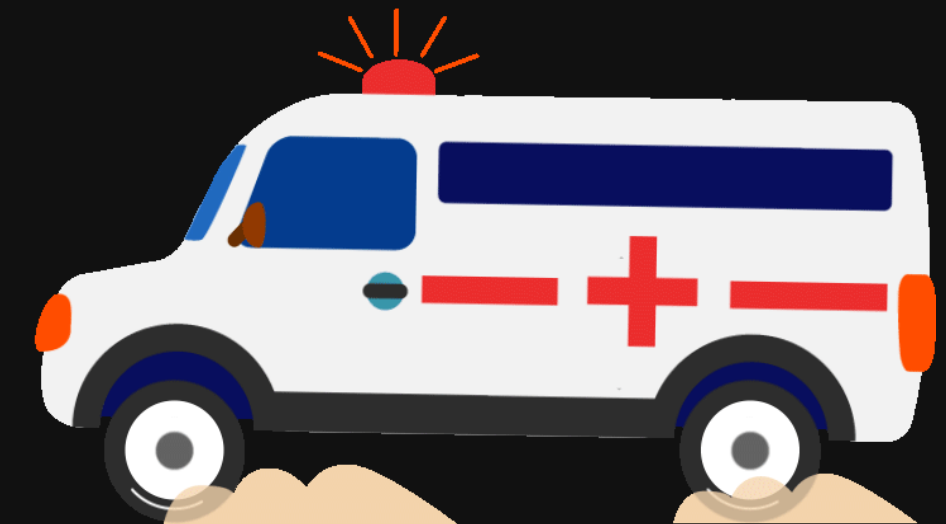
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- Lack of restraint system: seatbelts; car seats for children
- Lack of helmet use
- Lack of airbags
- Alcohol & drug use
- Roadside objects

## POST-CRASH INJURY OUTCOME

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- Pre-hospital care
- Emergency care



## ROAD SAFETY MANAGEMENT: PREPARING YOUR LGU



**MOTORCYCLISTS ARE AT  
RISK BECAUSE THEY:**

- share traffic space often with other fast-moving & heavier motorized vehicles (i.e., trucks, buses, trailers);
- are less visible;
- lack physical protection;
- represent a high proportion of global fleets in some regions (27% globally vs. 75% in SEARO).

SOURCE: MARGIE PEDEN

# ROAD SAFETY MANAGEMENT: PREPARING YOUR LGU



Head & neck injuries are the main causes of death, severe injury & disability for motorcyclists.

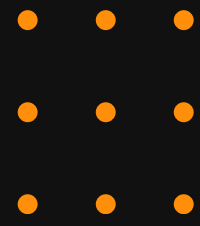


WITH HELMET



WITHOUT HELMET





## WHAT SHOULD BE ADDRESSED THROUGH LEGISLATION?



Properly fastened helmets worn at all times, whether destination is near or far.



Non

STANDARDS

Helmet

# IMPLEMENTATION CHALLENGES

to be best in  
point of view  
**Affordable**  
within one  
the financi  
low in pric



INADEQUATE  
MANUFACTURE  
& RETAIL



## THE ROLE OF SEATBELTS

- Reduces the consequences of a crash: for drivers & rear passengers.
- Without seatbelt, the victim collides with the interior of the car, other occupants or a possible ejection from the car.



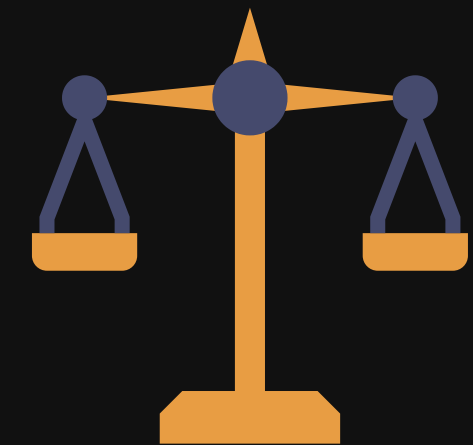
## SCOPE OF THE SEATBELT LAW

- The law covers all occupants of the car - front and rear seat passengers and the driver;
- Avoid restrictions (e.g. roads, time of day, speed levels);
- Wide variety of exemptions in various countries.



## ENFORCEMENT MECHANISMS

- Provide penalties (fines): demerit points, license suspension;
- Provide primary enforcement laws
- Clarify responsibilities



SOURCE: MARGIE PEDEN



Road  
Safety

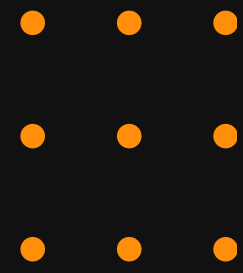
## SOLUTIONS

- Enforcement is crucial; fear of punishment is a deterrent & a determinant factor for compliance;
- Public campaigns - raise awareness on the risks associated with not using seatbelts;
- Advocacy - bring implementation issue as a political priority.



## CHALLENGES

- Importance of context in designing effective seatbelt programs;
- Weak compliance;
- Knowledge gap on seatbelt;
- Ineffective enforcement; and,
- Opposition from other groups.



## ROLE OF CHILD CAR SEATS (RESTRAINTS SYSTEM)

- Reduce consequences of the impact by keeping them in the seats;
- Distributing the forces of a crash over the strongest parts of the body;
- CRS is designed for children: cope with their developmental stages & accommodate the size and weight.

# SEATING POSITION & RISK

The rear seat is the safest place for children.

Injury risk is reduced, whether restrained or unrestrained, when a child sits in the rear seat.



## UNRESTRAINED

Risk reduced by 26% for children sitting in the rear seat.

## RESTRAINED

Risk reduced by 14% for children sitting in the rear seat.



## THE ROLE OF THE LAW

- Effectiveness of the law: increase CRS use
- Limitations of voluntary schemes
- Law regulates many key aspects
- Obligation to use child restraints
  - *Enforcement mechanisms (penalties)*
  - *Standards for CRS*
  - *Vehicle standards: fixture systems (ISOFIX)*



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## WHAT IS DISTRACTION?

### SOURCES OF DISTRACTION:

- Internal [e.g., tuning a radio, talking on mobile]
- External [e.g., looking at billboards]



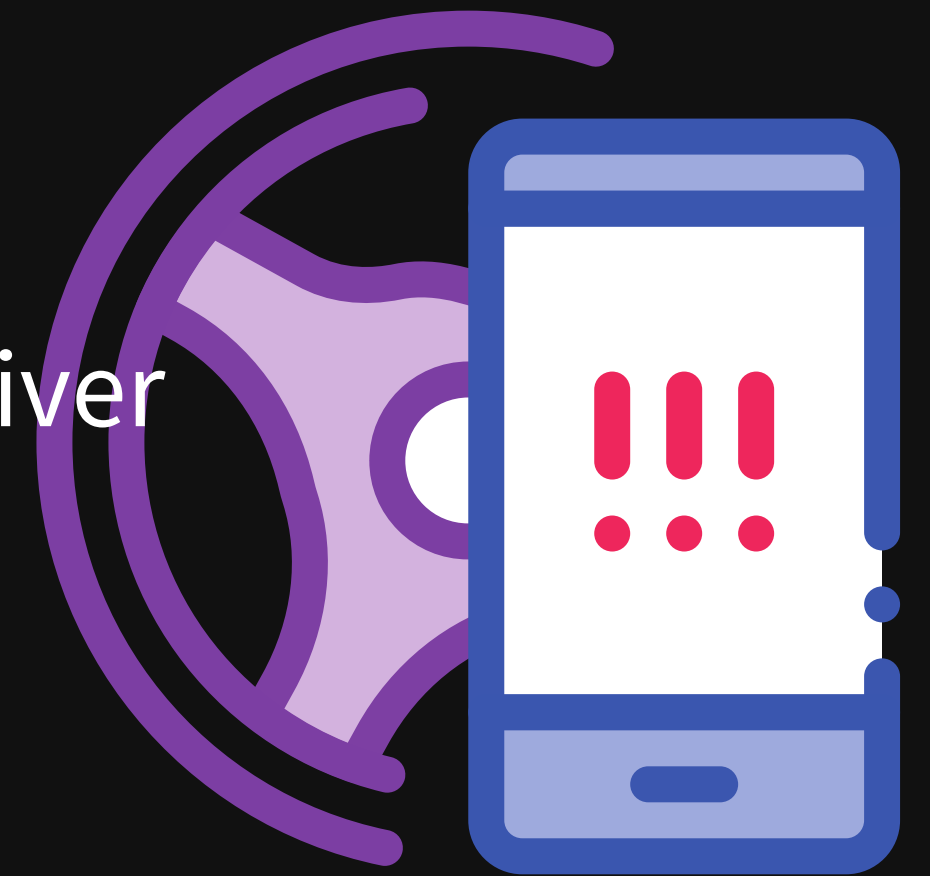
## FOUR TYPES OF DRIVER DISTRACTION:

- VISUAL [e.g., looking away from the road];
- MANUAL [e.g. dialing on a mobile, leaning over to tune the radio];
- COGNITIVE [reflecting on a subject of conversation]
- AUDITORY [device is turned up so loud it masks other sounds]

BY: MARGIE PEDEN

## CONTRIBUTION OF DISTRACTION TO COLLISIONS

- Data are not routinely collected when crashes occur.
- Drivers using mobile phones while driving have increased, ranging from 5-10%.
- Estimates of proportion of crashes caused by driver distraction:
  - *Australia: 14% of crashes*
  - *New Zealand: 10% of crashes*
  - *U.S.A.: 80% of crashes, 16% of fatal crashes*



## EFFECTS OF MOBILE PHONE ON CRASH RISK

- Drivers using mobile phone are 4x more likely to be involved in a car crash;
- Similar risk for both hand-held & hands-free phones due to cognitive distractions.
- Effects of age and sex:
  - *Young and novice drivers: high-risk group*
  - *Elderly: more tasks at the same time, increased reaction time*
  - *Text messaging: much higher crash risk*



# CHALLENGES

- Enforcement is difficult, especially with hands-free phones & blue tooth devices;
- Consumers of high-end vehicles prefer those with high-tech vehicle technologies;
- Overlap with other technologies; and,
- Legislation need to keep pace with rapidly changing technological environment.



# QUIZ

Each correct answer gets five (5) points each .

## QUESTION 1

What are the examples of modifiable and non-modifiable risk factors?



## QUESTION 2

What are the types of prevention and give examples of each.

