Road Safety: saving lives in cities
Objectives

To present:

• Road safety issues worldwide
• Who are the main victims
• The impacts of poor road safety and how to prevent its detrimental effects
• The global efforts to improve road safety
• The Safe System Approach
• The financing options
Road traffic injuries are the 8th leading cause of fatalities

- About 1.35 million people die every year
- About 20-50 million are injured non-fatally every year, with many incurring disability
- 1st leading cause of death for children & young adults aged 5-29.
- 59% of road deaths are adults aged between 15 and 44 (most productive years of life)
- 77% of road deaths are males
The developing world suffers most

Death Rates per 100,000 Inhabitants (WHO, 2015)

Source: https://commons.wikimedia.org/w/index.php?curid=73917099
High Economic Impact

The cost of inaction is the difference between projected gains and status quo scenario

THAILAND

Gain in GDP pc (real GDP at constant national prices, 2011 USD)

- 75% RTI mort. reduction
- 50% RTI mort. reduction
- 25% RTI mort. reduction


7% to 22% additional increase in GDP per capita over 24 years can be achieved through 50% reduction in road traffic injuries
Global Commitments

SDG 3.6 seeks to halve the number of global deaths and injuries from road traffic crashes by 2020, e.g., from over 1.3 million fatalities to 600,000 per year.

Stockholm Declaration, at the completion of the 3rd Ministerial Conference on Road Safety (February 2020)
Insufficient progress during the Decade of Action for Road Safety

No reduction in the number of road traffic deaths in any low-income country since 2013

Rates of road traffic death per 100,000 population by WHO regions: 2013, 2016

Number of countries where a change in the number of road traffic deaths has been observed since 2013

- **Low-Income**:
  - Increased: 27
  - No Change: 1
  - Decreased: 0

- **Middle-Income**:
  - Increased: 60
  - No Change: 15
  - Decreased: 23

- **High-Income**:
  - Increased: 17
  - No Change: 7
  - Decreased: 25

Road Safety: saving lives in cities
Pedestrians, cyclists & motorcyclists are the most vulnerable road users
Impacts of traffic accidents

- Traffic deaths and injuries have a detrimental economic impact on the poor and are pulling them into further poverty.
- Road collisions are estimated to cost around US$518 billion or 1 – 4% of countries’ annual GDP.
- Reducing road traffic mortality by 50% and sustaining it over a period of 24 years could generate an additional flow of income equivalent to 22.2% of 2014 GDP in Thailand and a 7.2% increase in the Philippines.
- If no action is taken, road traffic injuries are expected to become the fifth leading cause of death globally by 2030.
Main Risk Factors

- Speeding
- Drink- and drug-driving
- Non-use of helmets, seat belts & child restraints
- Distracted driving
- Unsafe road infrastructure
- Unsafe vehicles
- Inadequate post-crash care
Speeding

- Every 1% increase in speed results in a 4% increase in the fatal crash risk and a 3% increase in the serious crash risk.

- The death risk for pedestrians hit by car fronts rises rapidly (4.5 times from 50 km/h to 65 km/h).

- The fatality risk for car occupants in car-to-car side impacts is 85% at 65 km/h.

  - **Best practice**: 30 km/h or less where large numbers of pedestrians are present and no more than 50 km/h on urban roads.

Drink-, drug- & distracted driving

- **Drink-driving**, the risk of a road traffic crash starts at low levels of blood alcohol concentration (BAC) and increases significantly when the driver's BAC is ≥ 0.04 g/dl.

- **Drug-driving**: the risk of incurring a road traffic crash is increased to differing degrees depending on the psychoactive drug used (e.g., the risk of a fatal crash occurring among those who have used amphetamines is about 5 times the risk of someone who hasn’t).

- **Best practices** for drink–driving laws includes a BAC limit of 0.05 g/dl for the general population and a BAC limit of 0.02 g/dl for young or novice drivers.

- Drivers using mobile phones are about 4 times more likely to be involved in a crash than drivers not using a mobile phone.

- Hands-free phones are not much safer than hand-held phone sets, and texting considerably increases the risk of a crash.
Non-use of motorcycle helmets, seat-belts, and child restraints

- Head injuries are the leading cause of death and major trauma for two- and three-wheeled motor vehicle users.

- Correct helmet use can lead to a 42% reduction in the risk of fatal injuries and a 69% reduction in the risk of head injuries.

- Wearing a seat-belt reduces the risk of death among drivers and front seat occupants by 45 - 50%, and the risk of death and serious injuries among rear seat occupants by 25%.

- The use of child restraints can lead to a 60% reduction in deaths.

**Best practices:**
- Children at least until 10 y.o. or 135 cm in height shall be in a child restraint.
- No children in the front seat.
Unsafe road infrastructure

- Roads should be designed keeping in mind the safety of all road users including pedestrians, cyclists, and motorcyclists.

- Cycling lanes, safe crossing points, raised crossings, speed bumps, and other traffic calming measures are critical to reducing the risks for road users.

People want speed bumps!
Unsafe vehicles & inadequate post-crash care

Unsafe vehicles

Vehicle safety is not effectively regulated through design standards or maintained through mandatory vehicle inspection in many developing countries.

80% of countries sell vehicles not meeting UN regulations (WHO 2015).

Inadequate post-crash care

Delays in detecting and providing care for those involved in a road traffic crash increase the severity of injuries.

Care of injuries after a crash has occurred is extremely time-sensitive: delays of minutes can make the difference between life and death.
Public transportation is safer than private vehicles

- Reduction in fatalities and serious injuries in cities by up to 50% if bus priority systems are implemented

- “High Transit' cities with strong rail networks like Barcelona, Durban, Jerusalem and Toronto have the lowest rates of road injuries compared to 'Informal' type cities in other countries where poor urban design contributed to twice the injury rates.

- Potential reduction in fatalities could be achieved when transport safety policies are combined with land use and transport policies that minimize reliance on privately owned motorized vehicles and emphasize space for walking, cycling and public transport

The Safe System Approach:

Errors are inevitable but traffic fatalities and serious injuries should not be.

Roads should be designed so that human error does not have a serious or fatal outcome.
Speed Management

Speed determines the severity of crashes and injuries, affects the potential to avoid a crash, capacity to stop in time, reduce maneuverability, and cause others to misjudge the timing of approaching vehicles.

Speed can be managed through sound road design and management, appropriate speed limits and education on the impacts of vehicle speed. Speed also determines the level of safety features and physical separation between road users required in the transport system.

Source: World Bank, 2019, Good Practice Note: Environment & Social Framework for IPF Operations
Enforcement of laws and regulations

- Consistent enforcement can contribute to a change in traffic culture over time.

- Laws and enforcement should consider risk factors such as speed, yielding to pedestrians or cyclists, seatbelt wearing, drunk driving, motorcycle helmet wearing, and use of child restraints.

- Speed and red-light cameras, data collection, and analysis can improve enforcement.
Education and capacity building

- Road safety education can help overcome misconceptions and lack of awareness. Behavioral norms should be addressed through media campaigns that address specific problems and are linked to education and enforcement actions.

- Educational programs can be developed in schools to help children be safer as pedestrians, cyclists, and motorized vehicle passengers.

- Communities or local governments can engage the public through active educational experiences, such as street-theater performances; street closure events; temporary street design changes, using road cones or other movable materials; and speed limit trials.
Street design and engineering

Principles

Street design has a crucial effect on how people use and experience roads and a strong interrelationship with speed management and enforcement. It can reduce or eliminate conflicts between modes of transport and make it easier for people to understand how the space is divided or shared by different modes.

By being more “forgiving”—that is, by reducing the opportunity for errors to occur and the impacts of those errors when they do occur—it can reduce the likelihood that a collision is fatal.

Guidance

• Craft designs that reflect proven solutions, prioritized or refined based on local data and analysis of traffic deaths and serious injuries

• Conduct traffic safety audits on new infrastructure plans and inspections of existing infrastructure

• Design roads to move traffic at appropriate speeds in cities, towns, and rural areas

• Provide safe spaces for pedestrians, bicyclists, and motorcyclists

• Use speed humps, curb extensions, medians and median refuge islands, roundabouts, and neighborhood traffic calming to reduce speeds

Low-speed zones/prioritizing pedestrian safety. Source: Sustainable & Safe, WRI, GRSF.
Road safety infrastructure upgrades in Addis Ababa, Ethiopia

Examples of what has been done:

• 90km of sidewalks built or underway
• 37km of improved signs and line marking
• 30km of pedestrian fences
• 1,300 bollards
• 3,500 street lights across more than 20km
Vehicle design and technology is perhaps the fastest-growing area of road safety. Traditionally, it focused on keeping vehicle occupants safe from crashes.

Recently, car design and technology has made it possible to increase safety for occupants of other vehicles, pedestrians, and cyclists in the case of a collision. Higher safety ratings can be achieved at relatively low cost.

80 percent of countries sell vehicles that do not meet UN priority safety standards (WHO 2015).
Components of Post-crash Response

One countrywide emergency phone number!

Source: WHO, 2016
Leapfrogging toward a Safe System Approach in Low and Middle-Income Countries

- Prioritizing Finances
- Strengthening Institutions and Frameworks
- Strengthening Laws, Regulations and Guidelines

Road Safety: saving lives in cities
Funding for Road Safety

- Several options are available, such as:
  - **Sustainable road safety dedicated funding**
    - Central and local government budgetary allocations
    - Road user charges (e.g., driver testing, licensing)
    - Levies on private sector operated insurance premiums
    - Traffic fines
    - Impact bonds
    - Levies on sales of new vehicles or tires
  - **Better use of existing investments**
    - Use of broader transport budgets
    - Maximizing value of non-transport expenditure
  - **Short-term seed funding**
    - Multi-lateral donor funding (e.g., grants, low-interest loans)
    - Private sector sponsorship
    - Philanthropic sources

Road Safety: saving lives in cities
Thank you

Annexes to follow
Principles, Core Elements, and Action Areas of the Safe Systems Approach

<table>
<thead>
<tr>
<th>PRINCIPLES</th>
<th>CORE ELEMENTS</th>
<th>ACTION AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humans Make Errors</td>
<td>Economic Analysis</td>
<td>Land Use Planning</td>
</tr>
<tr>
<td>Humans Are Vulnerable to Injury</td>
<td>Priorities and Planning</td>
<td>Street Design and Engineering</td>
</tr>
<tr>
<td>Responsibility Is Shared</td>
<td>Monitoring and Evaluation</td>
<td>Improved Mobility Options</td>
</tr>
<tr>
<td>No Death or Serious Injury Is Acceptable</td>
<td>Comprehensive Governance and Management</td>
<td>Speed Management</td>
</tr>
<tr>
<td>Proactive vs. Reactive</td>
<td>Strong Targets and Data</td>
<td>Enforcement, Laws and Regulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Education and Capacity Building</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vehicle Design and Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Post-crash Emergency Response and Care</td>
</tr>
</tbody>
</table>

*Note: Principles are multicolored, core elements are in grey, and action areas are in orange.*
- Addressing Pedestrian Safety
- Pedestrian Safety in road design and land-use planning
- Prioritizing pedestrian safety interventions
- Implementing pedestrian safety plan of action
- Evaluating pedestrian safety programs
Road Safety Management Capacity Reviews and Safe System Projects

Guidelines

Updated Edition

- Identify a lead agency in government to lead RS effort
- Assess the problem, policies and institutional settings
- Prepare a national RS strategy and plan of action
- Allocate financial and human resources to address the problem
- Implement specific actions to prevent crashes, minimize injuries and their consequences
- Support the development of national capacity and international cooperation
- Evaluate and monitor