INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE

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Traffic Enforcement: Challenges and Perspectives
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Unleashing the potential of data to achieve road safety targets

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International Road Federation
Geneva

The IRF has been assisting **public** and **private** stakeholders in the road **infrastructure** sector for nearly **70 years**.

IRF has evolved from a pure
« industry » and « lobby » organisation
into a multifaceted actor of the roads
and **mobility** sector

IRF Road Safety Work and Initiatives

- Group of RS Experts

- Leadership of UNRSC Pillar 2

- Projects & Tools

- Training, education & capacity building

- Advocacy & awarness raising

The ROAD SAFETY Issue

"Sometimes the living closes the eyes of the dead…

Sometimes the dead opens the eyes of the living."

Speech of S.Ndebele, Minister of Transport of South Africa,

New York, 2012

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8ᵗʰ leading cause of death

1.3 Million fatalities from road accidents

50 million disabled

Leading cause of deaths among 15 - 29 year olds

60% of all deaths are among 15 - 44 year olds

$1.8 Trillion – global cost of road accidents

Strong Global Mandate for the Safe System Approach

- Implementation of the Global Plan for the Decade of Action has been endorsed by both the **Brasilia Ministerial Declaration** last November and by the **UN General Assemb**ly in April (A/Res/70/260).

- The inclusion of road safety in the **Sustainable Development Goals** for health and cities with a target to halve the number of global deaths and injuries from road crashes by 2020 is the **UN's strongest ever commitment to road injury prevention.**

SAFE SYSTEM APPROACH
DECADE OF ACTION FOR ROAD SAFETY

PARTNERSHIP, COLLABORATION, AND CO-ORDINATION				
Pillar 1 Road Safety Management	**Pillar 2** Safer Roads & Roadsides	**Pillar 3** Safer Vehicles	**Pillar 4** Safer Road Users	**Pillar 5** Post Crash Response

- People make mistakes
- People are vulnerable
- Shared responsibility
- Need to strengthen all parts of the system

Steps to a Safe System…

1. Understand the urgency of a change (data)

2. Leadership (political and professional)

3. Engagement of all stakeholders

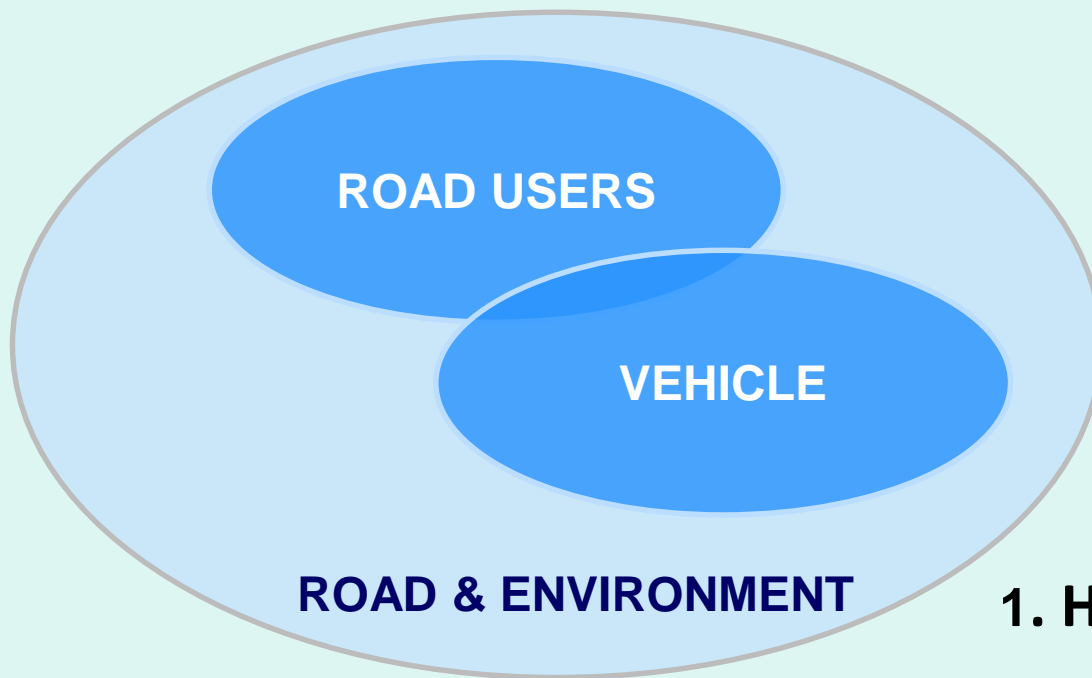4. Action (360°- policy, standards guidelines etc.)

OUR UNDERSTANDING AND KNOWLEDGE ABOUT
ROAD ACCIDENTS,
AND HOW TO ADDRESS THEM IS VERY GOOD

ROAD ACCIDENTS - RISKS AND RISK FACTORS

ROAD USERS

VEHICLE

ROAD & ENVIRONMENT

1. HUMAN FACTORS

2. VEHICLE DESIGN AND FEATURES

3. ROAD DESIGN & ENVIRONMENT

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THE HADDON MATRIX

PHASE		FACTORS		
		HUMAN	VEHICLES & EQUIPMENT	ENVIRONMENT
Pre-crash	Crash prevention	Information Attitudes Impairment Police enforcement	Road worthiness Lighting Braking Handling Speed management	Road design and lAyaout Speed limits Facilities for non-motorised road users
Crash	Injury prevention during crash	Use of restraints Impairment	In-vehicle restraints Other safety devices Crash protective design	Crash protective roadside objects
Post-crash	Life sustaIning	First Aid skills Access to trauma care	Ease of access Fire	Rescue facilities Traffic congestion

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Road Traffic Deaths per 100 000 Population, by Country Income Status

- Low Income: 24.1
- Middle-income: 18.5
- World: 17.5
- High-income: 9.3
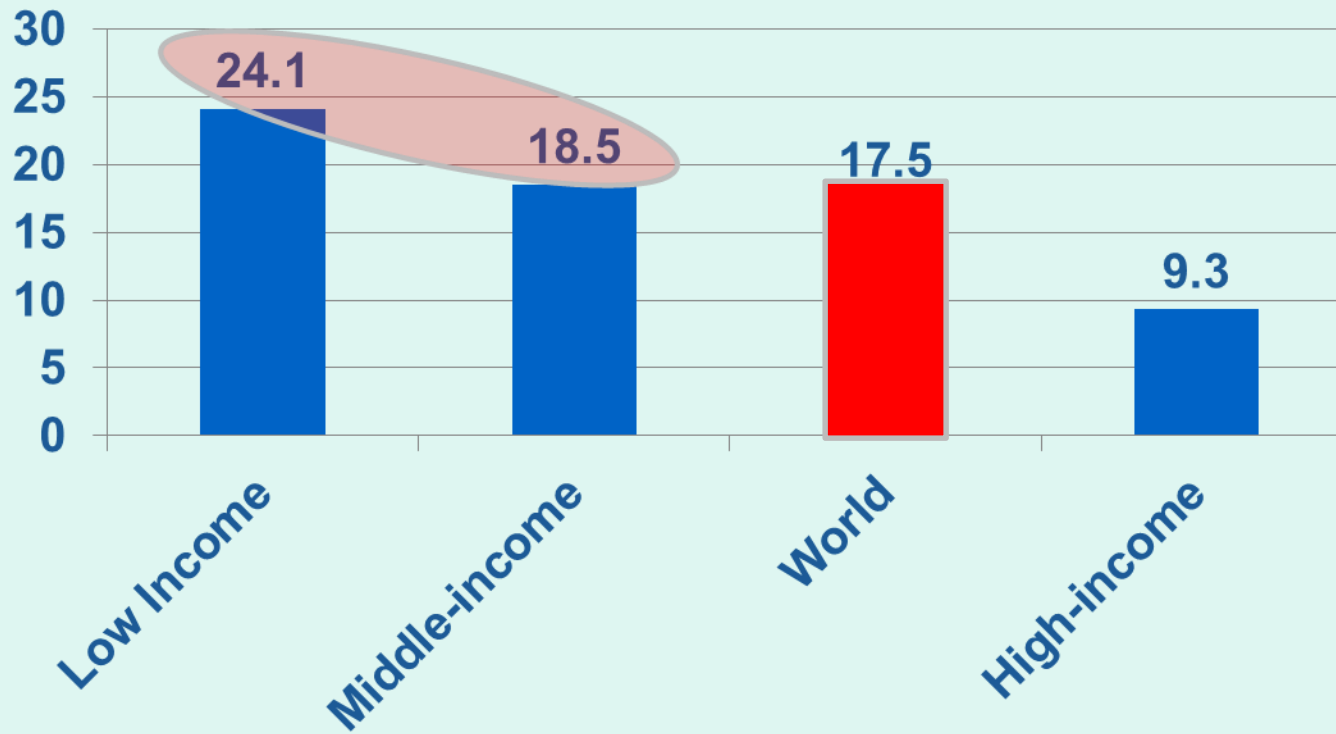
WE THINK THIS FIGURE IS AN UNDERESTIMATE

AND THIS IS THE PROBLEM

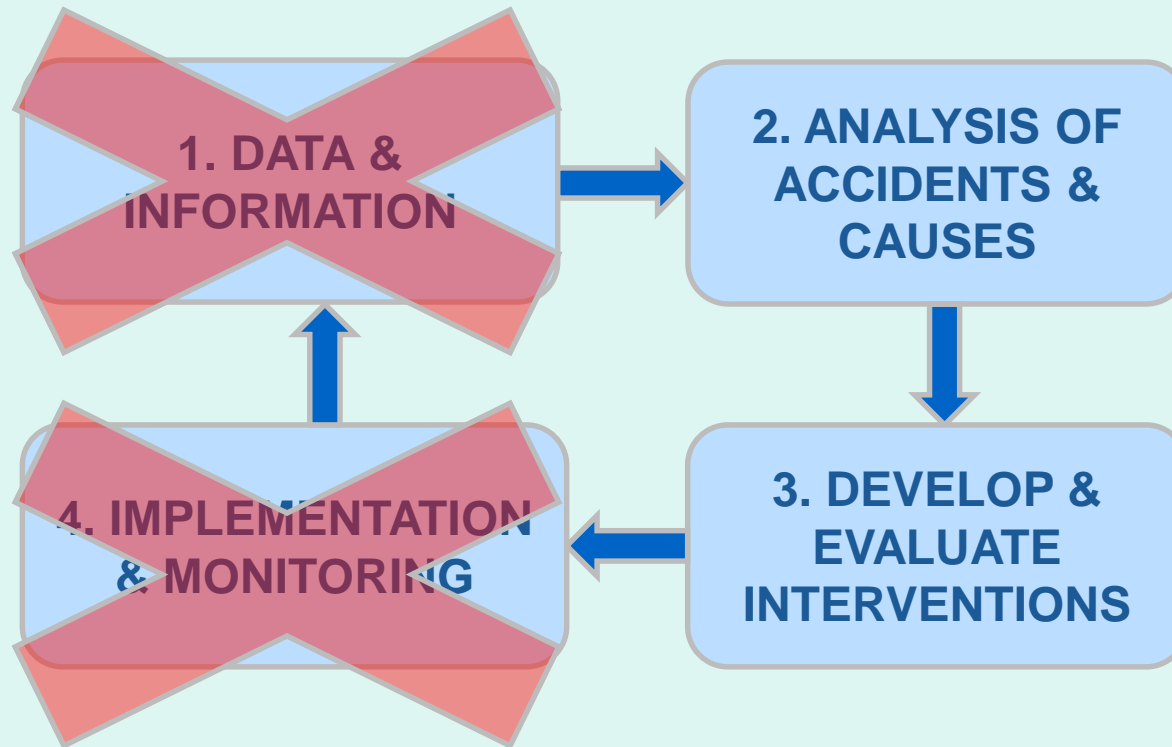# THE NUMBER OF ACCIDENTS IS NOT AN OPINION, IT SHOULD BE A FACT

THE PROBLEM OF DATA

- Traffic fatalities are under-reported

- Data on non-fatal injuries is incomplete, or missing

- Costs of fatalities and injuries from accident is either missing, or incomplete

- Data quality is inconsistent and erratic

- Agencies responsible for data collection lack trained personnel and capacity (so poor analysis)

- The data that is available is difficult to access

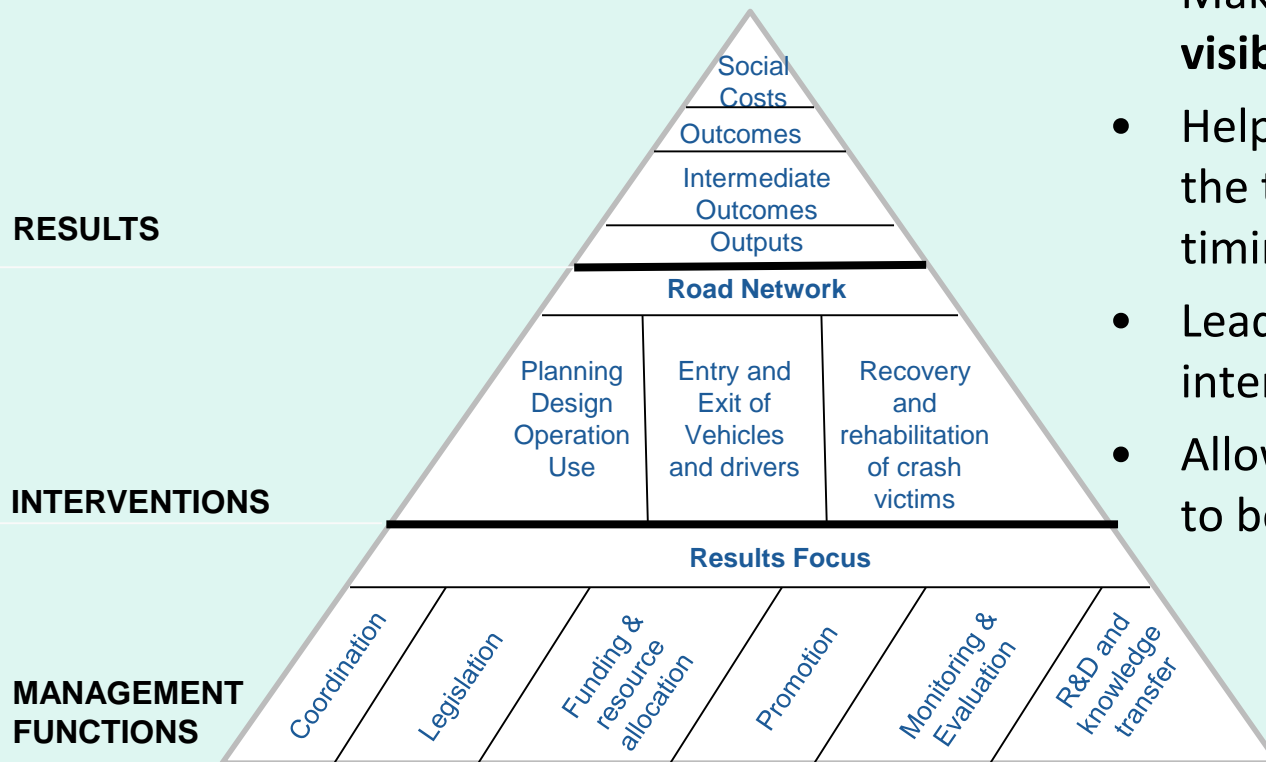# FOUR STEPS TO IMPROVING ROAD SAFETY

1. DATA & INFORMATION

2. ANALYSIS OF ACCIDENTS & CAUSES

3. DEVELOP & EVALUATE INTERVENTIONS

4. IMPLEMENTATION & MONITORING

DATA AND INFORMATION ARE AT THE HEART OF SUCCESSFUL POLICIES TO IMPROVE ROAD SAFETY

DATA AND INFORMATION

- Makes the problem of road safety **visible**

- Helps **develop our knowledge** about the traffic system, the location, timing and causes of accidents

- Leads to designing **evidence based** interventions that are costs effective

- Allows **performance** of interventions to be monitored

PILOT PROJECT

A CITY	A CORRIDOR

1. DATA

2. TRAINING AND CAPACITY BUILDING

3. EVIDENCE BASED INTERVENTIONS

4. PERFORMANCE MONITORING SYSTEM

1. DATA

CRASH DATA FOR FATAL ACCIDENTS

CRASH DATA FOR NON-FATAL ACCIDENTS

COST OF FATAL AND NON-FATAL ACCIDENTS

EXPOSURE OF PEOPLE TO RISK OF ACCIDENTS (TRAFFIC VOLUMES)

DATA ON COMPLIANCE WITH TRAFFIC RULES (STOPPING AT TRAFFIC LIGHTS, SEAT BELTS, HELMETS, DRUNK DRIVING

CRASH DATA FOR FATAL AND NON FATAL ACCIDENTS

# Road Accident Data Recorder (RADAR)

- Tablet based, wifi/GSM/GPS enabled, software application that
- Automatically dispatches crash investigation team via a link to police control room
- Standardises data collection
- Takes pictures of accident
- Supports the individual collecting data
- Link to car registration database
- Link to driving license database
- Alerts closest hospital/ambulance about accident and locations
- Provides information on location, time, cause, injuries and fatalities, vehicle(s) involved

EXPOSURE OF PEOPLE TO RISK OF ACCIDENTS (TRAFFIC VOLUMES)

- Traffic volume data is collected using sensors

- Travel and trip choices data is collected a using SMART PHONE app (Future Mobility Survey – FMS)

Traffic volumes using sensors
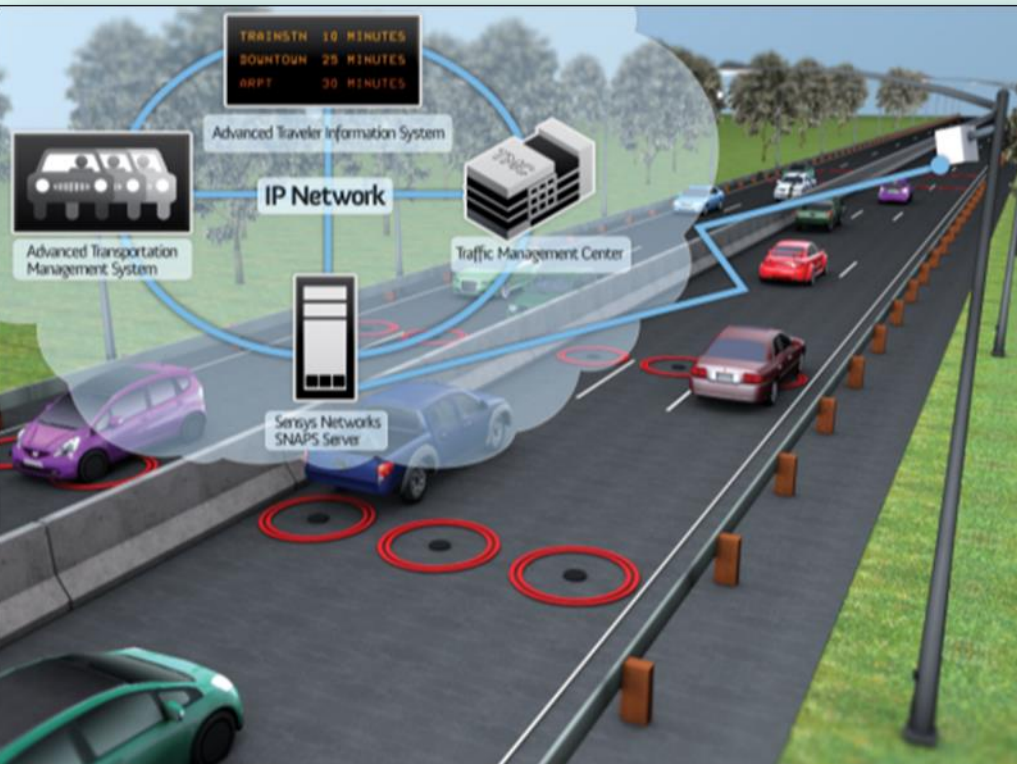
- Sensors that are installed in pavement
- Access points receive data from sensors,communicate this data to a central data storage and management system.
- Wireless technology
- Maintenance-free for 10+ years
- Installation is completed in minutes
- Sensor can be remotely managed, configured, and in the event of a malfunction,
- The sensors has upgradable firmware which prevents obsolescence of the system

DATA ON COMPLIANCE WITH TRAFFIC RULES (STOPPING AT TRAFFIC LIGHTS, SEAT BELTS, HELMETS, DRUNK DRIVING

Cameras for Enforcement

How red-light photo enforcement will work
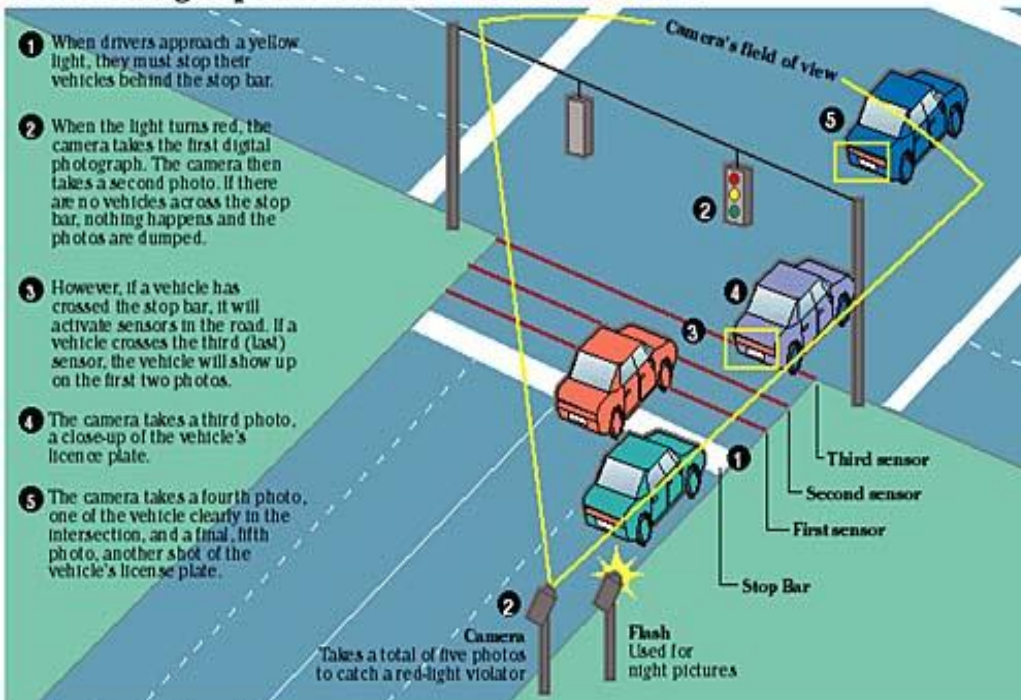
- Cameras to enforce stop lights

- Speed enforcement on road network

- Helmet use

- Manual, systematic inspections to determine compliance with seat-belt law, and drunk driving

SECTION CONTROL MEASURES THE MEAN SPEED OF VEHICLES PASSING A SPECIFIC ROAD SECTION. When this mean speed is **ABOVE** the lower ticket threshold, the driver receives a fine. The **DETECTION PROBABILITY OF SPEED OFFENDERS AT SECTION CONTROL is nearly 100%.**

ENFORCEMENT

NETHERLANDS
SECTION SPEED CONTROL:

Results indicate it works:
Serious Injuries: -37%
Slight injuries: -13 %
Property damage: -11 %
Total no. crashes: - 15%

KEY FEATURES

- GATSO T-Series Section Control solution
- Supply, installation and management of 44 cameras on 6 gantries
- 30 km of highway enforced with a single system
- No interference with road surfaces thanks to GATSO Loopless Trigger Radar technology
- Tailor made ANPR software delivers more than 90% read rate combined with 0.01% error rate
- Custom built management interface with GATSO XILIUM

PROJECT PROFILE
Project : Section control A2
Client : Public Prosecutor's Office - LPTV
Solution : GATSO T-Series Section control

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2. TRAINING AND CAPACITY BUILDING

- General course on understanding road safety
- Crash accident investigation
- Road safety audits
- Traffic system data processing and management
- Analysing crash data
- Analysis of travel demand
- System operation and management
- Providing pre-hospital trauma care to accident victims

3. EVIDENCE BASED INTERVENTIONS

- Infrastructure interventions based on road safety audits and black spot analysis
- Targeted interventions based on analysis of accidents and enforcement
- Safety campaigns at specific black spot locations to raise awareness about danger of accidents
- Proactive measures based on forecast traffic volumes on road network

4. PERFORMANCE MONITORING SYSTEM

- Crash accident and enforcement database automatically provide information for monitoring performance.

What data already tells us today

- 30% of serious crashes are caused by deliberate violations and risk-taking behaviour;

- The majority of serious crashes result from simple errors of perception or judgement by otherwise compliant people.

- It is unrealistic to expect that a focus on education and enforcement will achieve the needed step-change in improving road safety.

CONCLUSIONS (1)

- Road Safety poses challenges that cannot be adequately met using the traditional approaches. It really needs a **comprehensive approach**: the safe system approach.

- Implementing the safe system approach requires a shift in the mind set and taking **a long-term approach**. This long term approach can only be developed based on good data.

- Without **solid and consistent data** we simply cannot tailor the proper policies and interventions.

CONCLUSIONS (2)

- Sustained **funding mechanisms** have to be put in place to ensure the creation and the management of a coherent data system.

- Investing in **capacity building** for data collection and management will be a key component of any effective data system and road safety strategy.

- **Intelligent Transport Systems** are a powerful enabler for the implementation of the safe system approach.

Thank you

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