

Introduction - Safe System Approach to Road Safety

World Bank Team:

Radoslaw Czapski

with inputs from: Soames Job and Raphael Grzebieta,

Tbilisi

Georgia

March 2018



For years road safety professionals all over the world keep using the terms

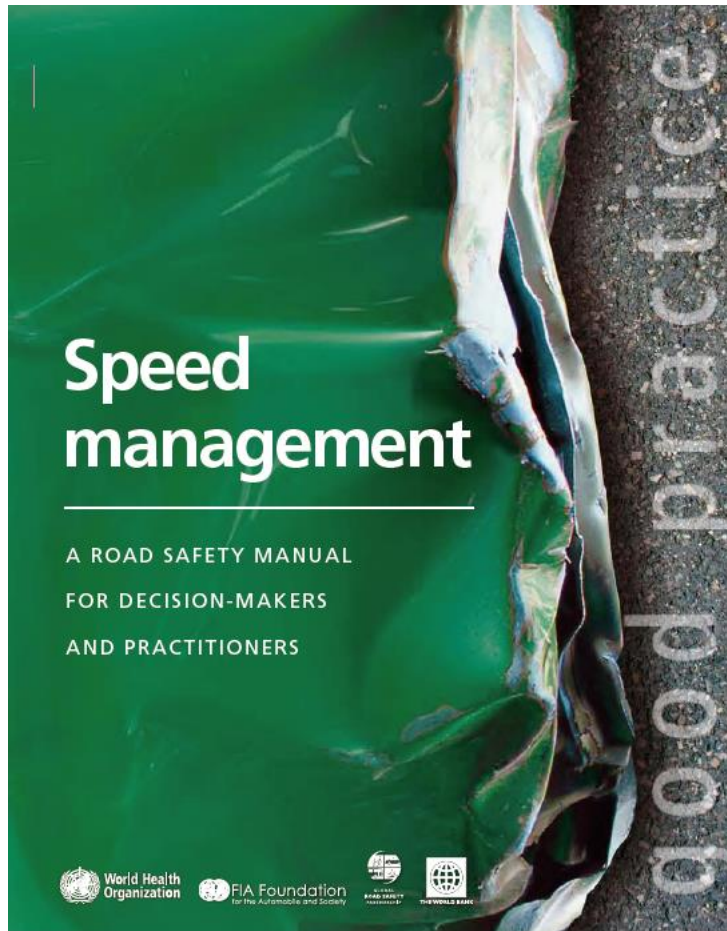
Safe Road Safety System

or

Safe System Approach to Road Safety

World Health Organisation (WHO)

Safe System Approach underpins WHO's strategy



1.2.3 Safe systems and the role of speed

In all regions of the world, to prevent road death and disabling injury, a traffic system better adapted to the physical vulnerabilities of its users needs to be created – with the use of more crash-protective vehicles and roadsides. The *Safe-system* approach, as exemplified by *Vision zero* (Sweden), *Sustainable safety* (Netherlands) and *Safe system* (Australia) (25, 26, 27, 28, 12) should set the framework for the long-term management of speeds on a nation's roads. Figure 1.7 illustrates the *Safe system* in conceptual terms.

The aim of a safe system is to achieve a road system that allows for human error without leading to death or serious injury. It recognizes the limits of force that the human body can survive and focuses on systematically addressing various factors involved in specific crashes, even the approach aims to manage the premise that road

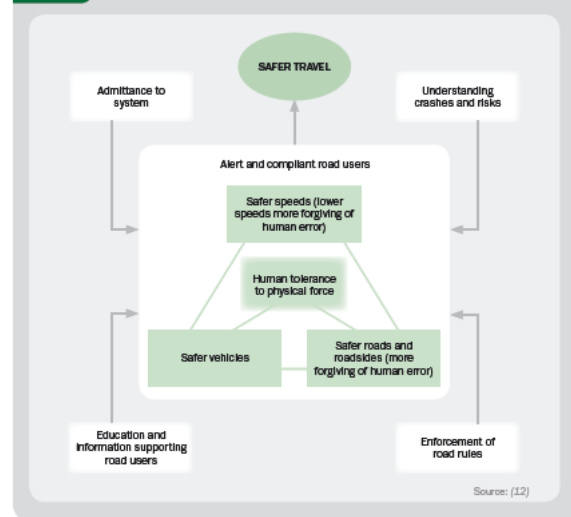
One important core and health is considered expressed within *Pi* taken. The long-term traffic. The moral burden in connection with

The consequences for in, for example:

- a 30 km/h speed limit on vulnerable road

- a reduction in the likelihood of fatal side-impact crashes at intersections (it is often preferable to build a roundabout instead of installing traffic lights, and it is advisable to limit approach speeds to less than 30 km/h)
- a reduction in the likelihood of fatal head-on crashes on two-way single carriageway roads (median barriers should be used with high volumes of traffic, or speed limits should be kept below 70 km/h).

Figure 1.7 A Safe-system model

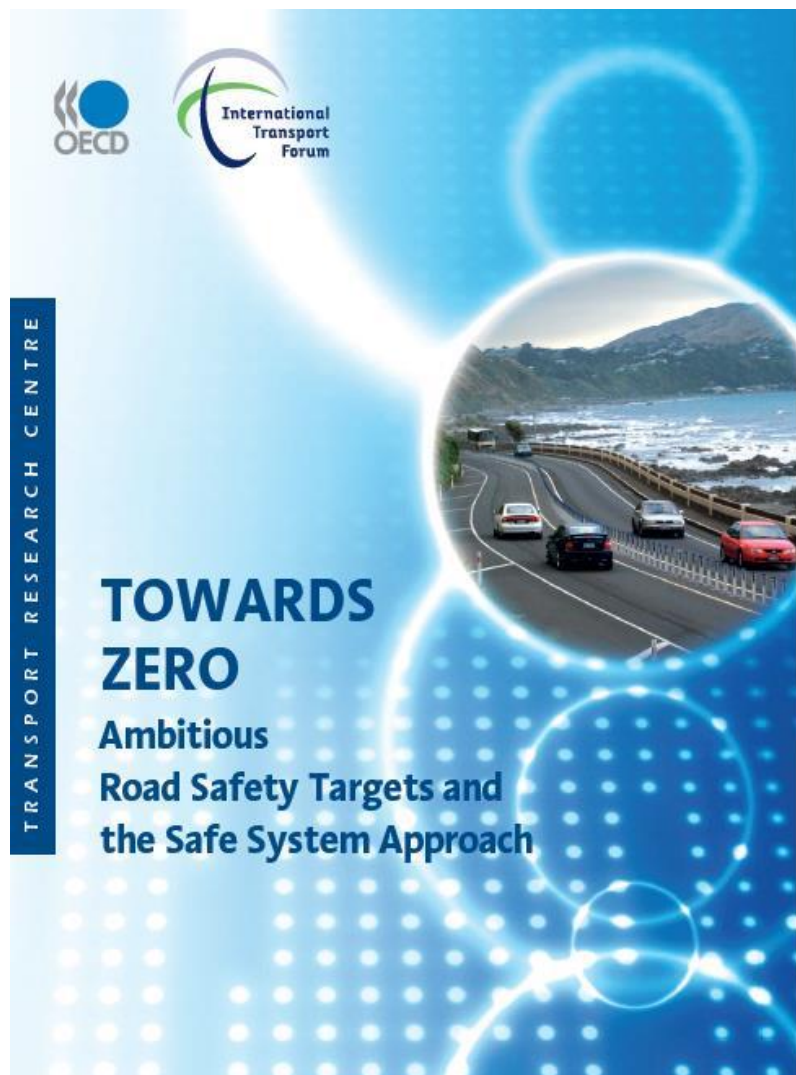


It should be the aim of low and middle-income countries first to stabilize any worsening situation, and second to create road safety policies rooted in 'good practice' as demonstrated by better-performing countries. *Safe-system* thinking can contribute to the immediate needs of low and middle-income countries and, as for all countries, to more rapid, long-term road safety improvement.

The *Safe-system* approach requires system managers to understand crash causes in order to assess crash risk. It is critical that the key risk factors that contribute

OECD International Transport Forum

Safe System Approach underpins ambitious targets



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5. THE SAFE SYSTEM APPROACH

ABSTRACT

A fundamental policy shift, characterised as the Safe System approach, is required both to consolidate the significant improvements in road safety in recent decades and to generate further gains in the future. This chapter describes how the Safe System approach can meet the expectation for continued road safety improvements and how it can re-frame the ways in which safety is viewed and managed. The chapter describes new ways to define road safety problems and identifies new groups of stakeholders to target and new methods of influence to improve performance. It also highlights opportunities for integration of road safety into other policy areas and draws conclusions on the safety benefits that can be expected from these approaches. Some guidance on steps towards implementation is provided in Annex C.

5.1. What is a Safe System approach?

5.1.1. The need for a fundamental shift in safety programmes

There has been a steady downward trend in road trauma in many decades. This has occurred largely as a result of implementing specific, identified risks and problems. There have been significant road network, in the crashworthiness of the vehicles using the road users. A range of these direct interventions and the opportunity that addressed in Chapter 3.

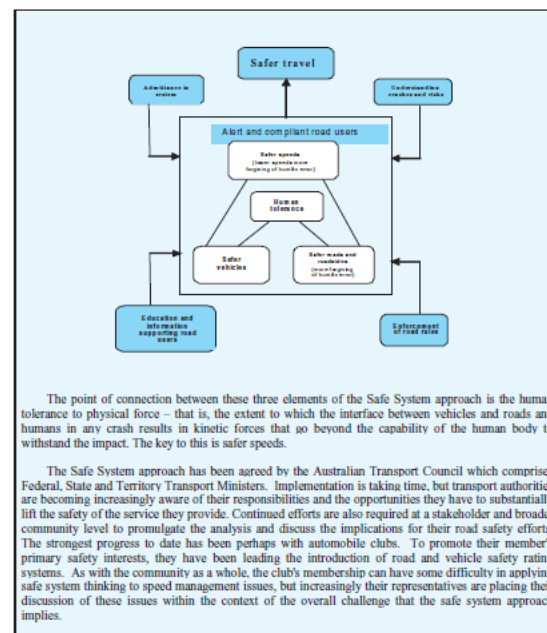
There has been extensive research into the causes and prevention and improvement of safety programmes. There have been developing and implementing national and regional safety plans analysis of the road transport system.

Traditional road safety interventions, and the supporting management effectiveness and need to be maintained and intensified. Nevertheless especially on behavioural campaigns are now aware that 'business maintain existing safety levels and is unlikely to generate significant Diminishing cost-effectiveness is already factored into analyses in rate of social cost reduction for each additional dollar investment programmes has been assumed to decrease from around 9:1 to 4:1 or

For example, most countries achieving a safety belt wearing 1 97% would be pleased with that progress. However, within a safe interventions that still leaves open the opportunity for fatality or serious traditional approaches of educational campaigns and enforcement to face rapidly declining returns. It is therefore necessary to find new

TOWARDS ZERO: AMBITIOUS ROAD SAFETY TARGETS AND THE SAFE SYSTEM APPROACH

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5.2.2. The Safe System approach to responsibility

Traditionally, the task of the road safety manager has been to identify the risks confronting road users, to develop and gain agreement (from government and elsewhere) on the best set of countermeasures, and to inform people about the decisions that have been made. The responsibility for the safety of the road transport system and the focus for road safety efforts have been centred on the

But what does **Safe System Approach** actually mean **in practice**?

And how to translate it into **simple and plain language** (English, Armenian, Belorussian, Azeri, Georgian, Moldovan, Ukrainian and Russian)?

Is this Safe System?



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EaP

Eastern
Partnership



This is Safe System!

with the risk of
excessive
physical force
removed, even if
the person
makes mistake

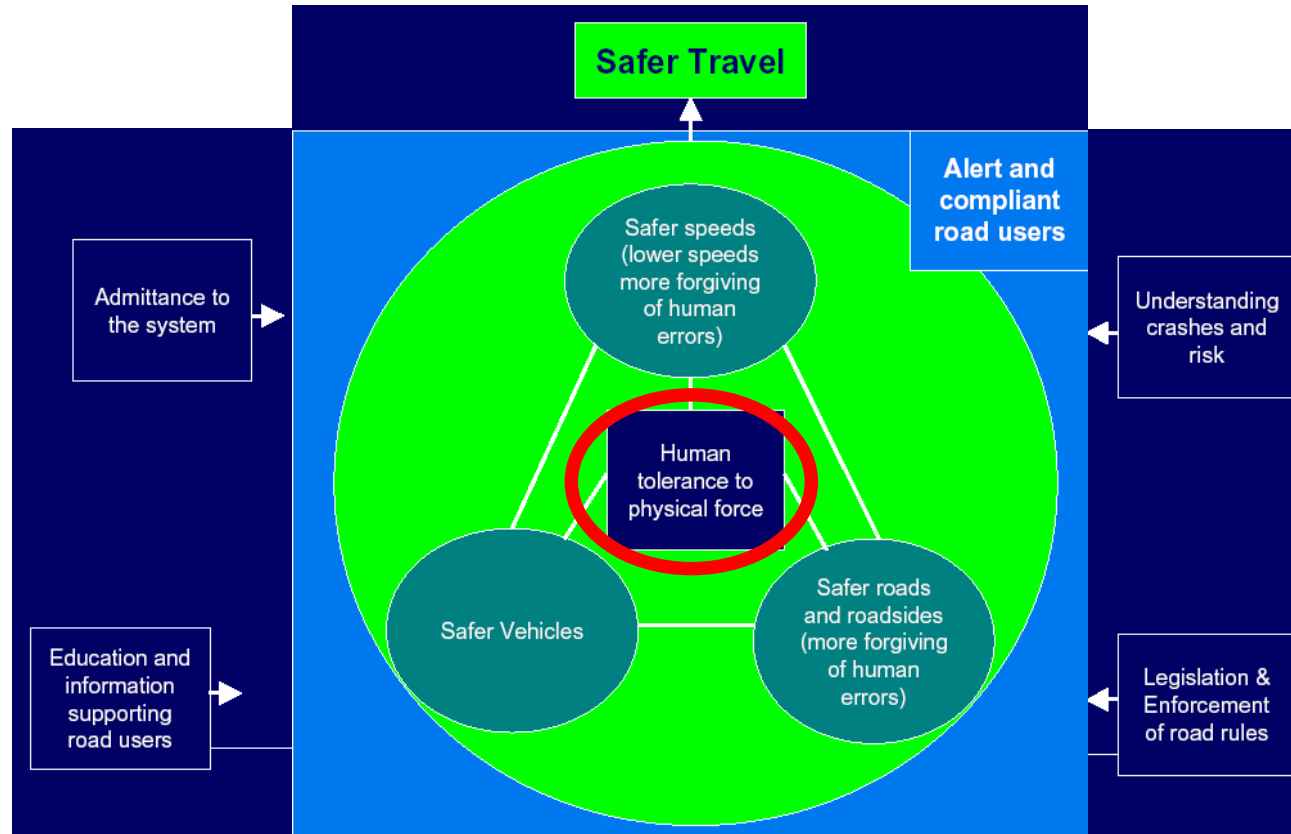


Safe System principles

- Important to recognise humans make errors
- Assess consequences of those errors
- Propose countermeasures: roads more forgiving of errors
- Countermeasures reduces crash severity to survivable limits and/or eliminate or compensates for the human error
- shift responsibility from emphasis on road users being responsible for behaviour on the road to a greater responsibility for road system designers and managers to build safe guards into the system to prevent injury-causing crashes
- No more trading off lives for benefit of mobility and cost efficiency – more humanistic ethical approach

Safe System principles?

Focus on **Biomechanics Criterion** instead of cost benefit



Source: Howard, E., Implementing a "Safe System" approach to road safety in Victoria, Proc. Road Safety Research, Policing and Education Conference, 2004.

Safe System principles?



Key Safe System Elements

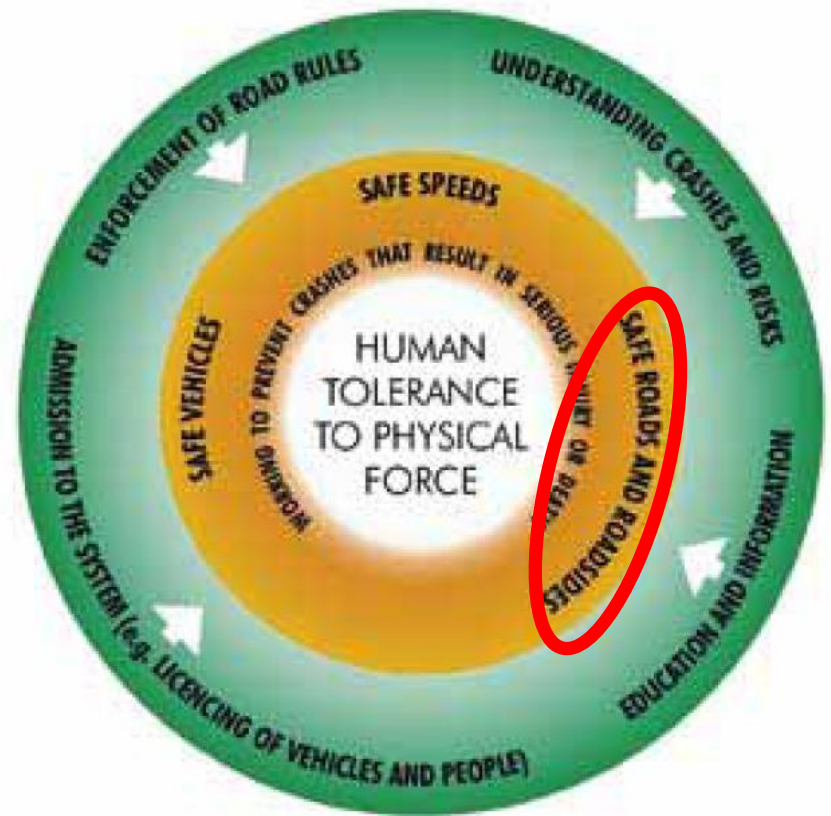
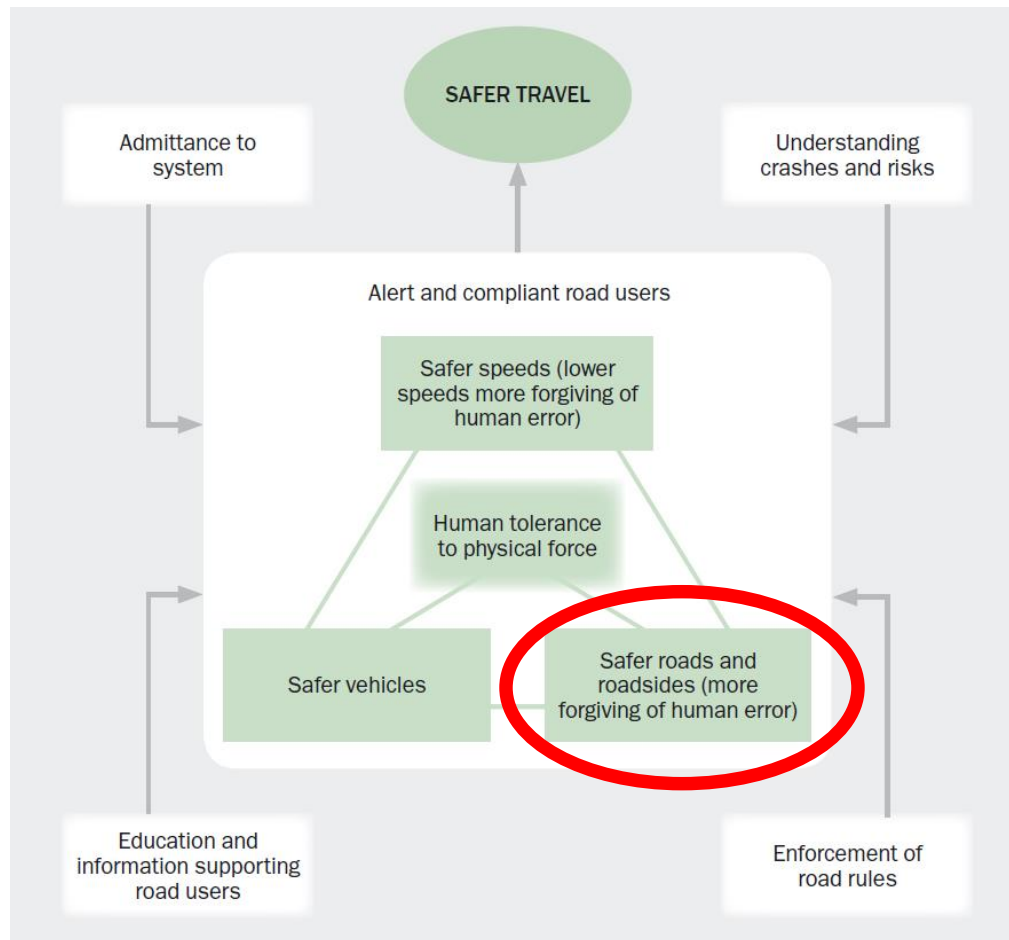
- **Best opportunities (evidence based) across:**
 - Management and monitoring
 - Vehicles
 - Post-crash care
 - Roads and Roadsides
 - Behavior change
 - Reduced exposure (road usage)
 - Speed management

All of the above should be preferably done in paralel to achieve lasting impact in road safety!!!

Management (and monitoring)

- Sound National Lead Agencies: critical
 - Singular focused accountability and responsibility
 - Full time staff to do the work, not just a committee
 - Power, funding
- Strategy and plans
- Sound data (on more than deaths and injuries) and monitoring of progress
 - “If you can’t measure it, you can’t manage it”
- **Suggestion: let’s consider an EaP regional road safety observatory**

Safe System Approach underpins many country's road safety strategies and actions



Safe vehicles

- Safe vehicles by design make a large difference
 - EU and state regulations and standards are a key way forward
- Vehicle industry standards - EuroNCAP
- Sound vehicle inspection processes (PPPs)
- Overloading

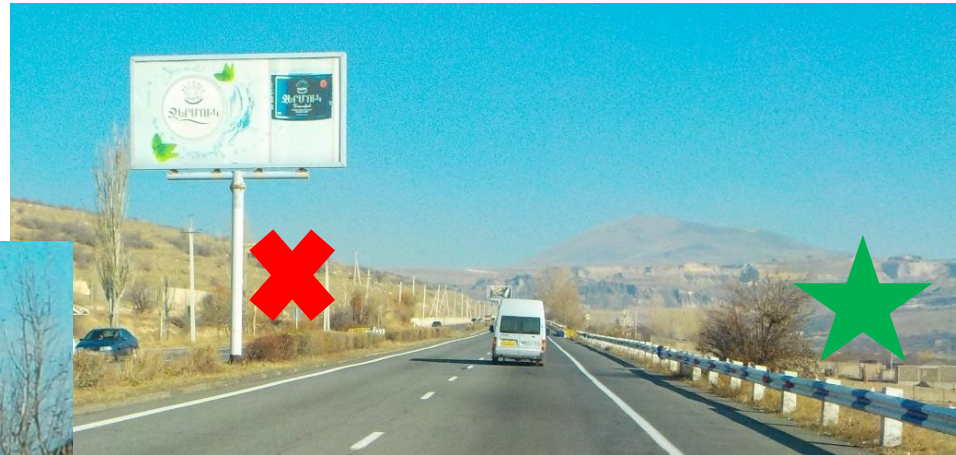


Emergency and post-crash care

- Can make a large difference:
 - Golden hour
 - Then, Golden half hour
 - Now, well established that all delays matter to survival and even functionality for survivors

Infrastructure: Roads & Roadsides

- Huge opportunities, not too expensive
 - Basic road side protection (barriers)
 - Pedestrian facilities



Behavior change

- International scientific evidence:
Training and education alone are not powerful in delivering improved road safety
- Enforcement **combined** with promotion/education on the enforcement are powerful
- Behavior change **creates** attitude change (seat belts, drink-driving, ...)

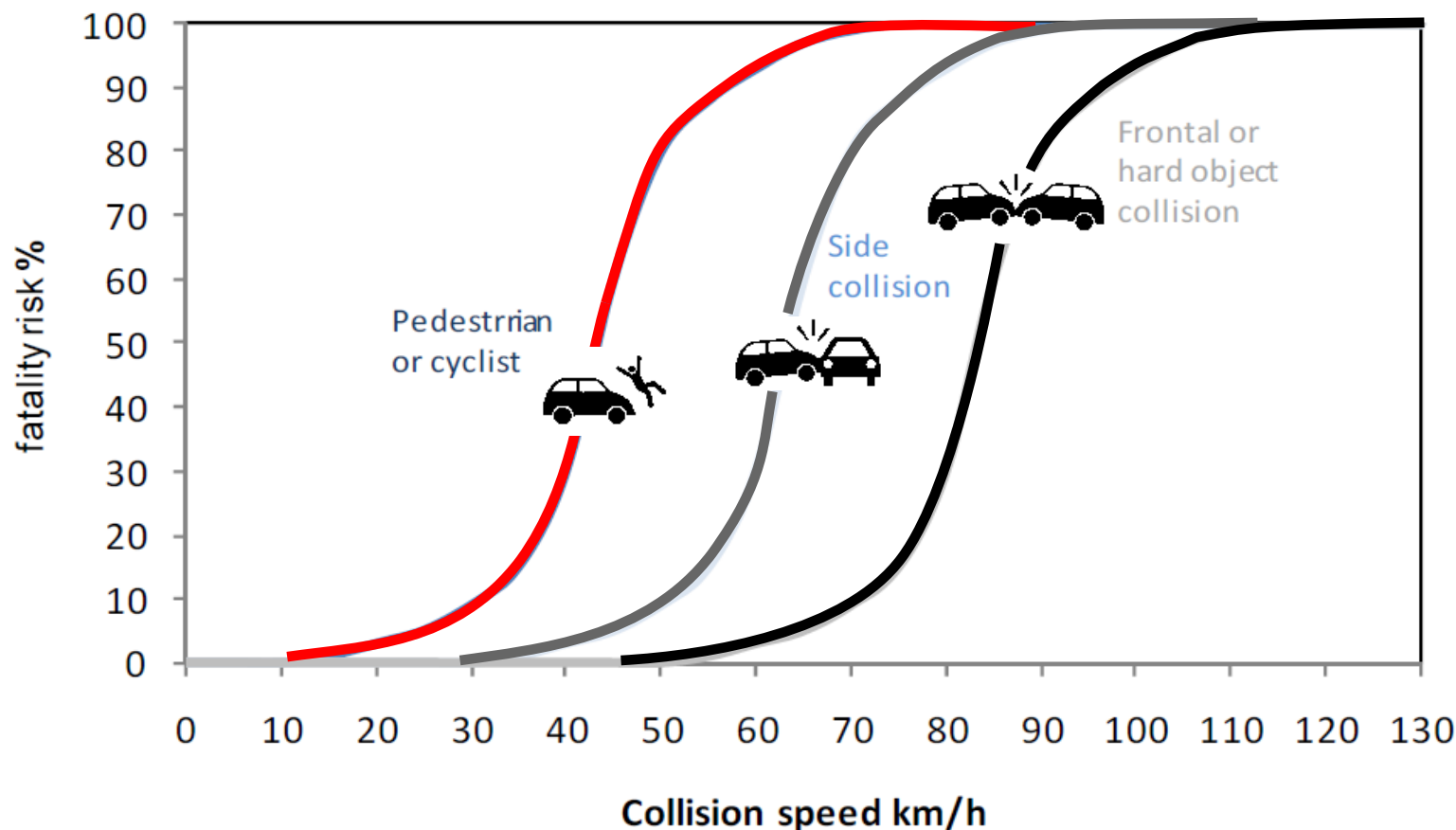
Speed management

- The best fast start-up opportunity
- Safe speed limits
- Road engineering
 - Speed humps, raised platform crossings, roundabouts,
- Vigorous enforcement and promotion of it
- Low enforcement tolerances
- Real penalties, properly managed

What is a survivable crash?

Safe System Approach

Make crashes survivable – intrinsic safety



Good speed limits in many rural towns in EaP
but need to reconsider limits in larger cities and
increase compliance



Pedestrian safety: speeds and infrastructure are critical

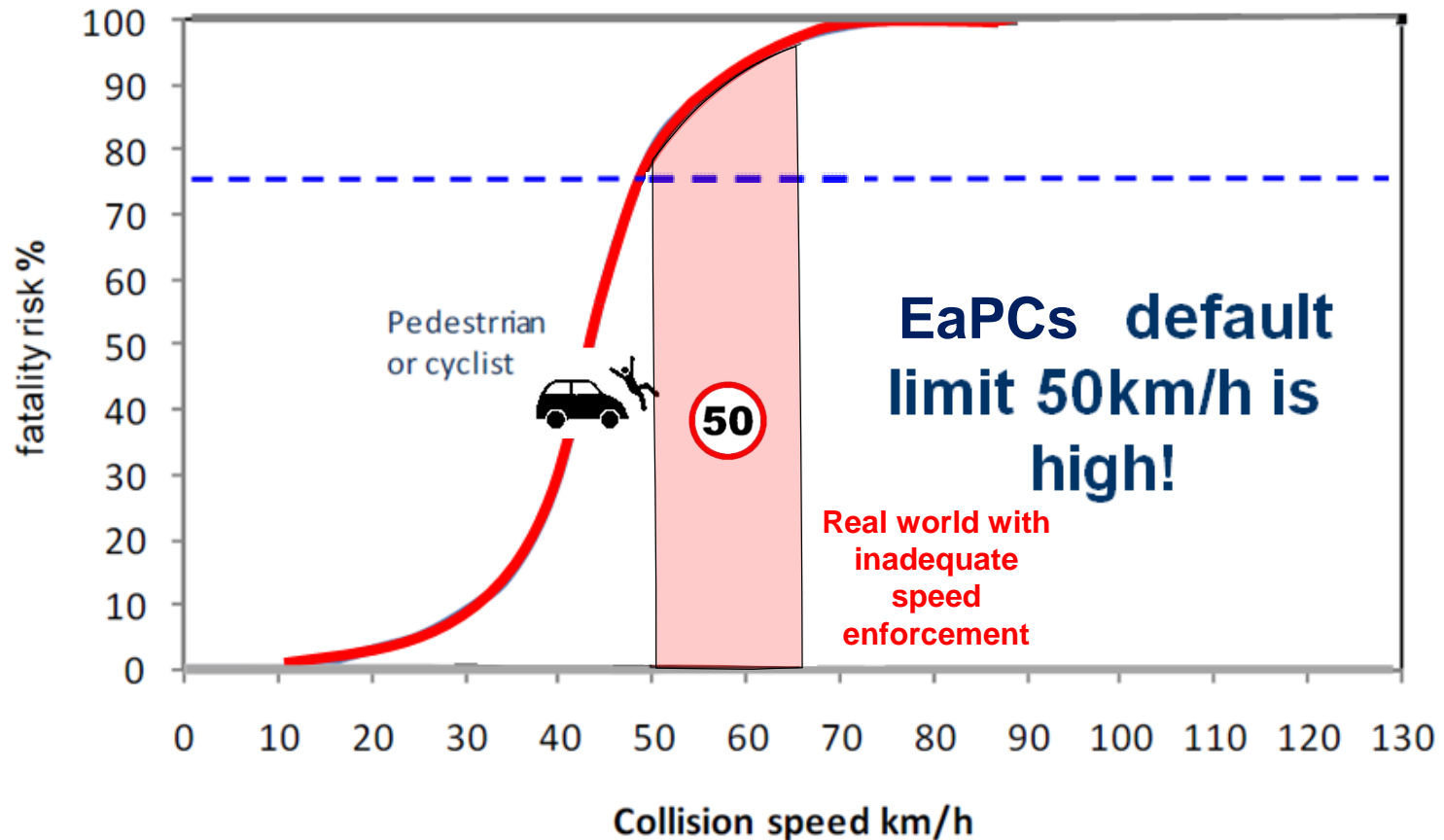


High percentage of deaths in EaP: 24% in Georgia to 42% in Belarus (WHO report, 2015)



What is a survivable pedestrian crash?

At 50 or 60 km/h still a very high risk of death



Why is it difficult to get support for enforcement?

Tendency to use personal experience of risk

“I have been driving for 6 months/5 years/25 years/50 years, and speed regularly. I have not had a fatal crash. So, either:


- Speeding is not as risky as road safety people claim
- OR
- It is risky for others but not for me.

But personal experience cannot reveal the problem! So it is wrong way to measure risk

Right Way:

What happens when the issue is changed?

Scientific research on changing speed limits:

Sliogeris (1992): 100km/h up 110km/h 25%  injury crashes

Sliogeris (1992): 110km/h to 100km/h 19%  injury crashes

Nilsson (1990): 110km/h to 90km/h 21%  fatal crashes

Scharping (1994): 60km/h to 50km/h 20%  all crashes

NHTSA (1989): 89km/h up 105km/h 21%  fatal crashes

Bhatnagar (2010): 110km/h to 100km/h 26%  casualty crashes

•Note this is not assuming that everyone obeys the limits. If they did benefits would be greater.

CONCLUSIONS – Safe System Approach

- Systematic evidence based action works in road safety
- Countries have more in common than separating us
- Key opportunities for road safety exist for EaP, especially in
 - road safety management,
 - roads & roadsides,
 - speed management,
 - Behavior change (enforcement and promotion)

Questions/comments?



Together
We can save
lives.