

ROAD DESIGN: WHAT IS THE ROLE FOR ROAD SAFETY AUDITS?

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Agenda

- **Background / Introduction** – Are Road Safety Audits delivering safe roads?
- **The Safe System:** What is it?... And what does it mean for me?
- **Why is road safety management important?**
- **Road Safety Audits** and the Safe System
 - What is **risk**?
 - When or what **stage** is most critical?
 - Why have **recommendations**?
 - What is more important: **process or outcome**?
- The way forward



Road safety audits

Road Safety Audits

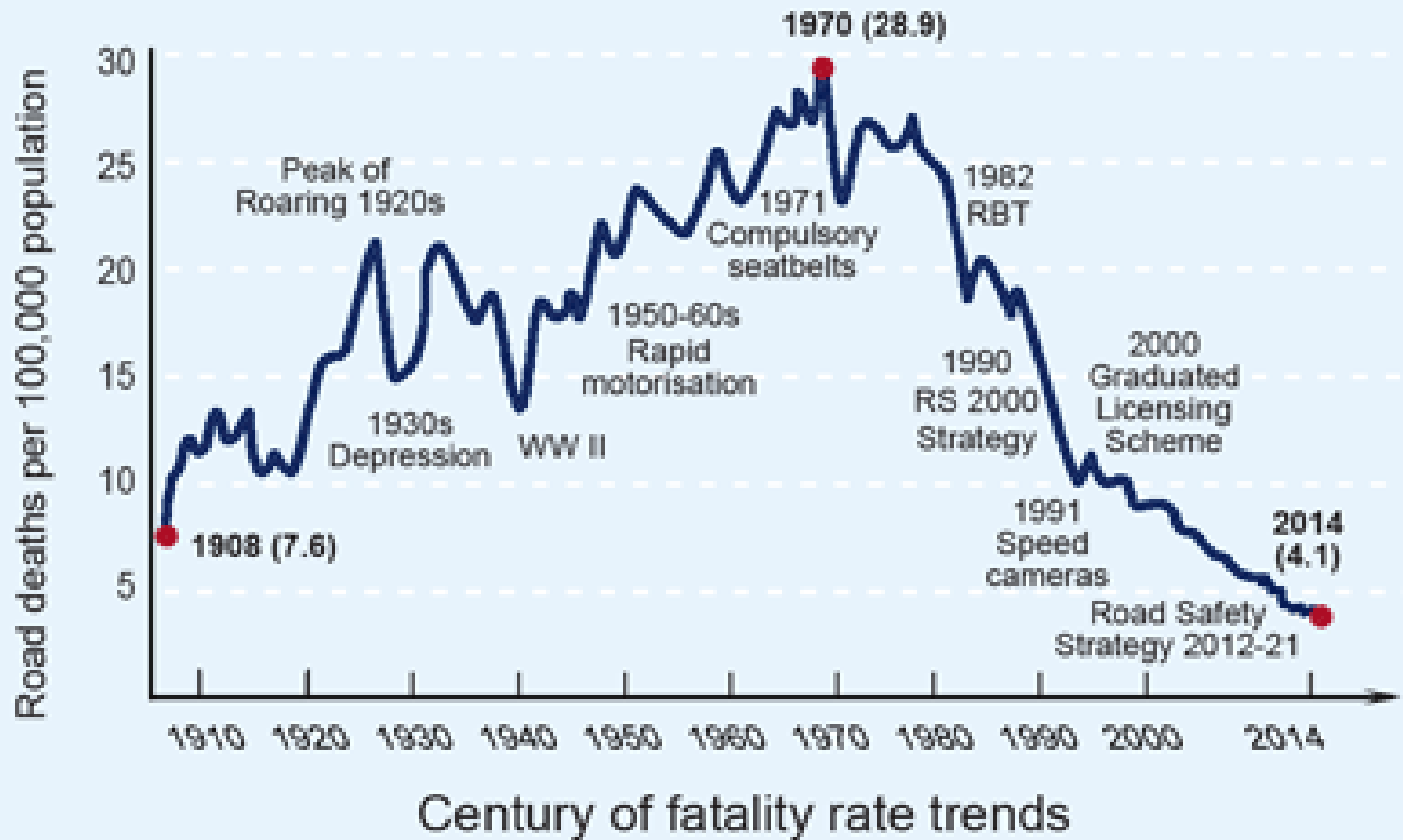
Road Safety Audits

Background

- ❑ Are Road Safety Audits delivering Safe Roads?
 - ✓ Evaluations
 - ✓ Cost to Benefit Ratio (CBR)
- ❑ What is a Safe Road?
- ❑ What should be the objective of a Road Safety Audit?
- ❑ Difference between new roads and existing roads

Road safety audits

Background to the Safe System
(or a short history of road safety)

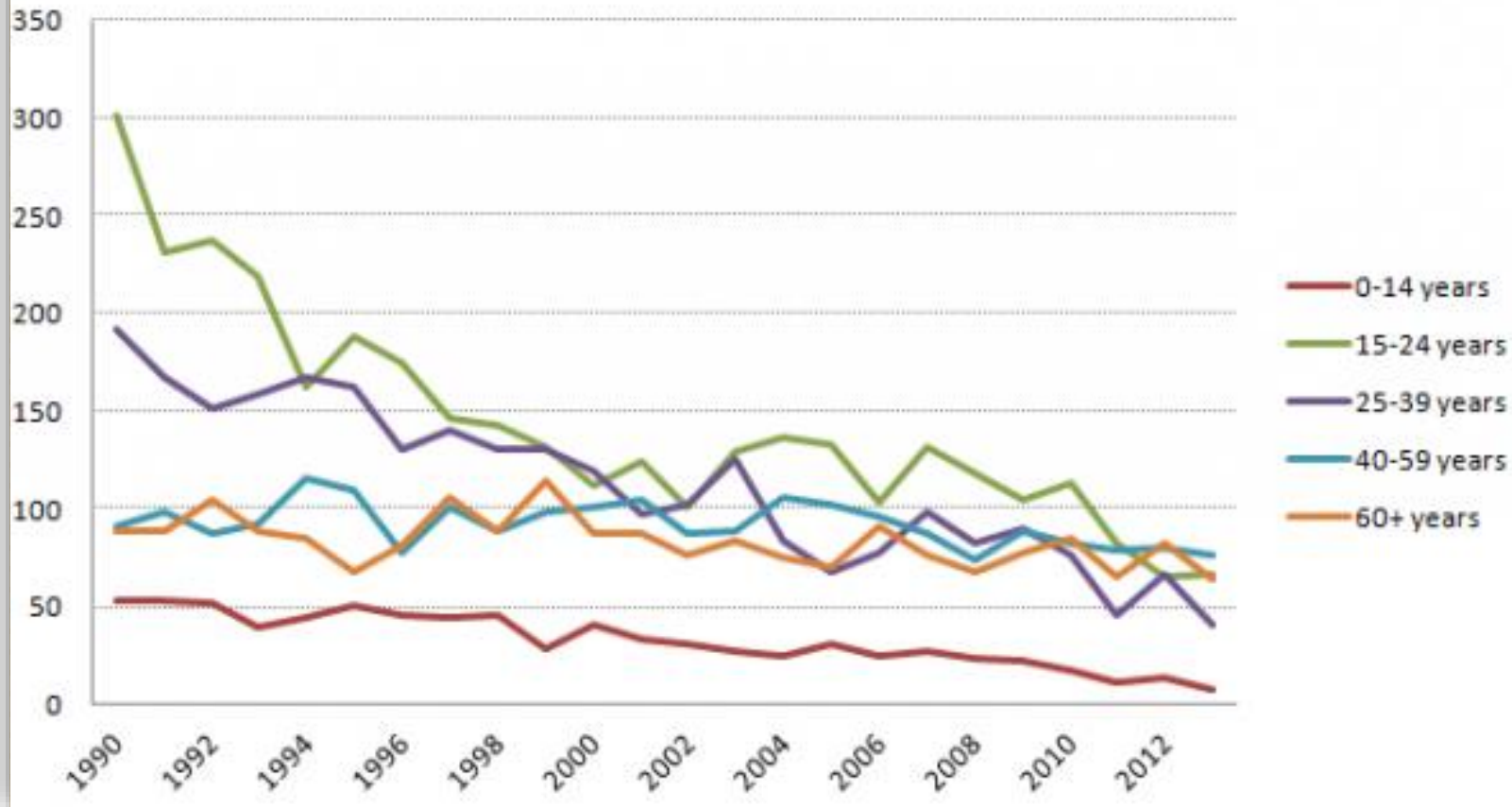


The road toll

Long-term trends

- Follows economy
- Road safety trends and interventions

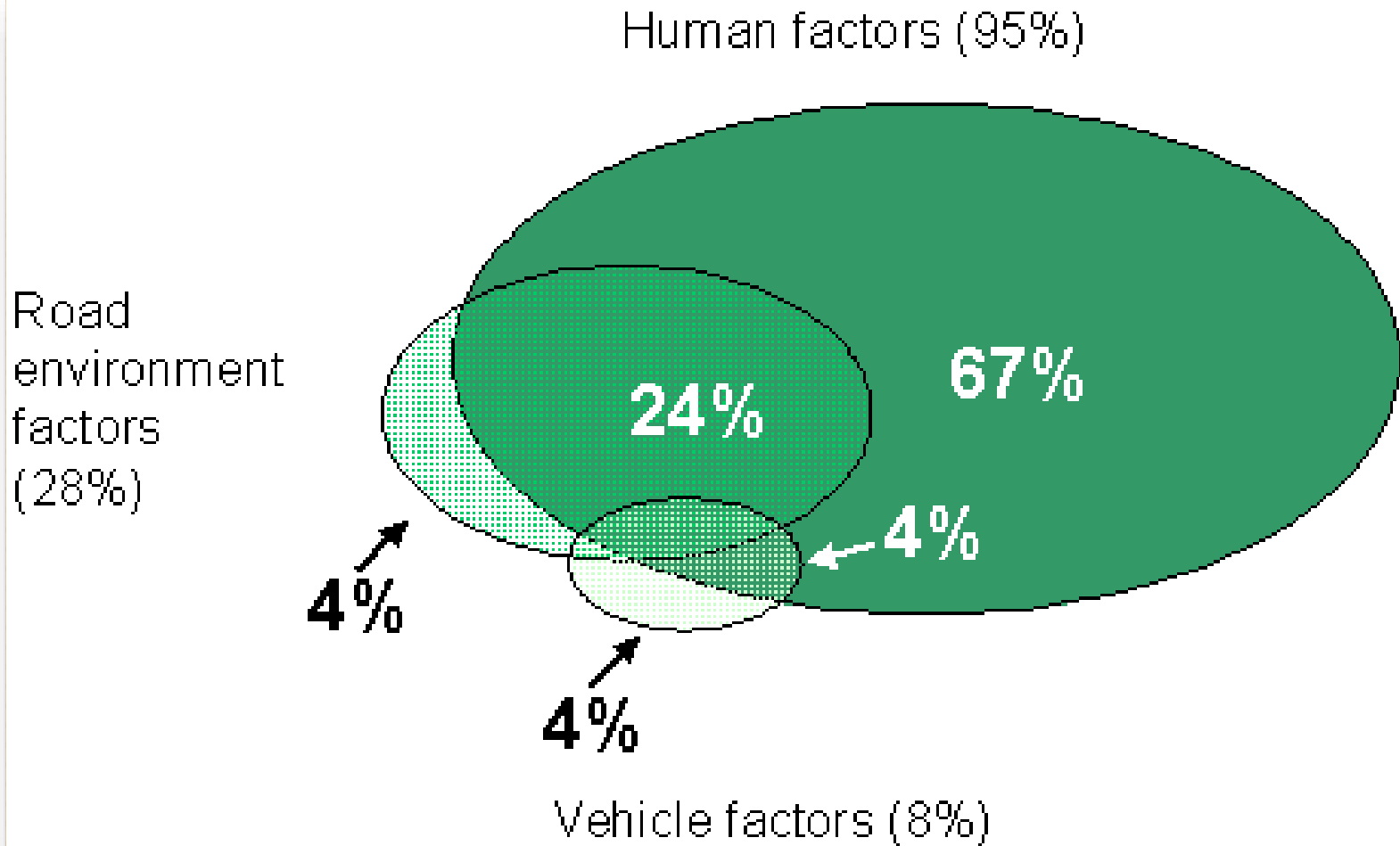
Road deaths by age group



The road toll

However -

- Limits to reductions
- Search for 'silver bullet' ?



Old Model (not Safe System thinking)

- Used for many years
- As rate of improvements reduced, a new model was required

Background to Safe System

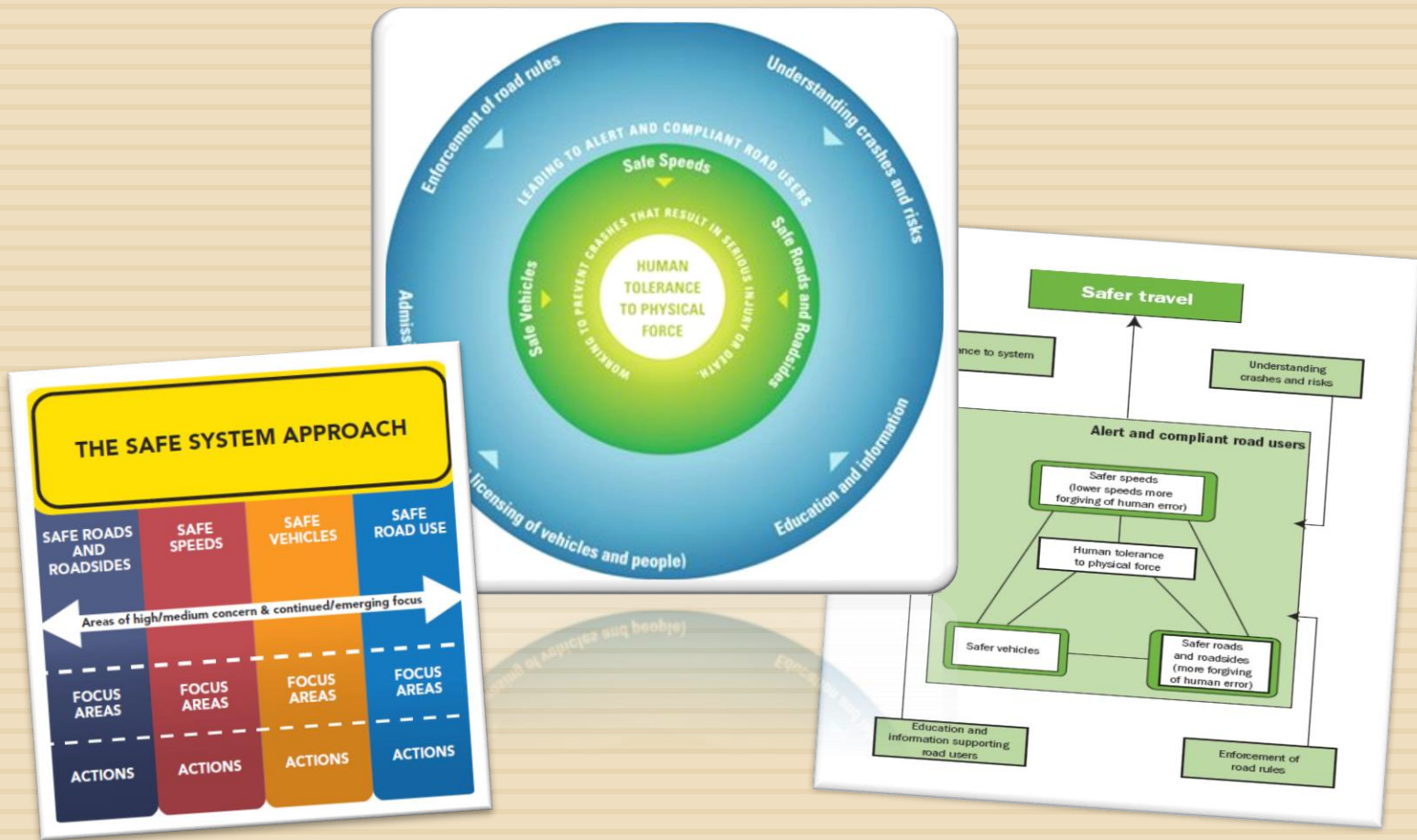
To sum-up

- Reduction in road toll was plateauing
- A new model was required to drive the road toll down:
 - ✓ Road safety resources are limited
 - ✓ There are limits to behavioural change programs e.g. speeding
 - ✓ Engineering measures can mitigate human error
 - ✓ International experience shows strategic approach works



Road safety audits

Safe System



Safe System

Various ways to illustrate

- Based on the same common principles

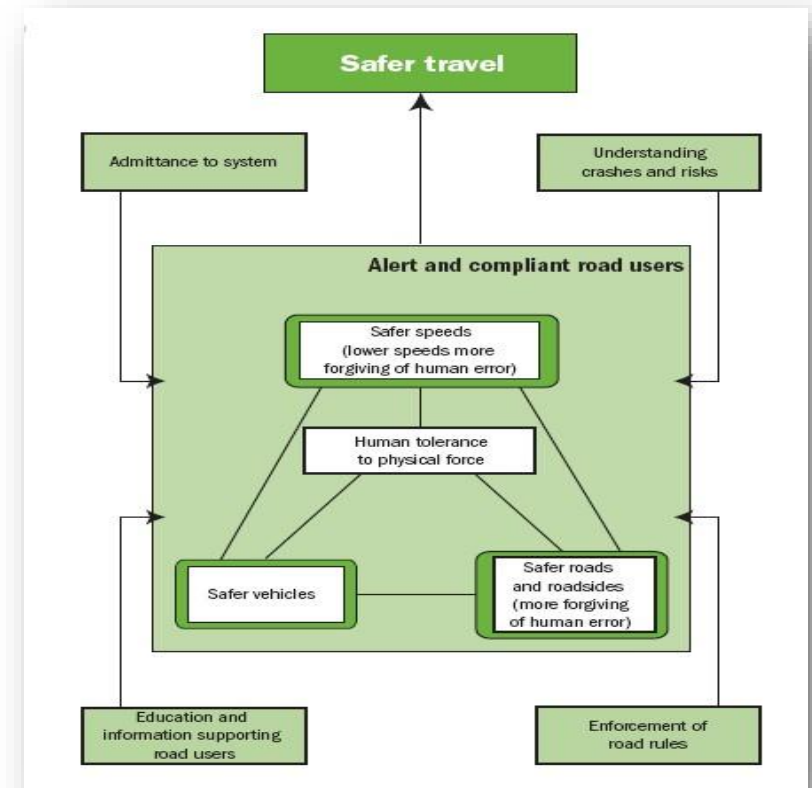
Safe System

Key areas

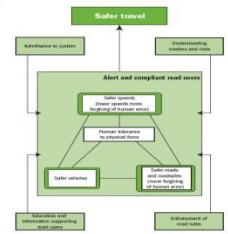
- ❑ Speed
- ❑ Vehicles
- ❑ Road
- ❑ Users ??

Support

- ❑ Management
- ❑ Enforcement
- ❑ Entry and exit

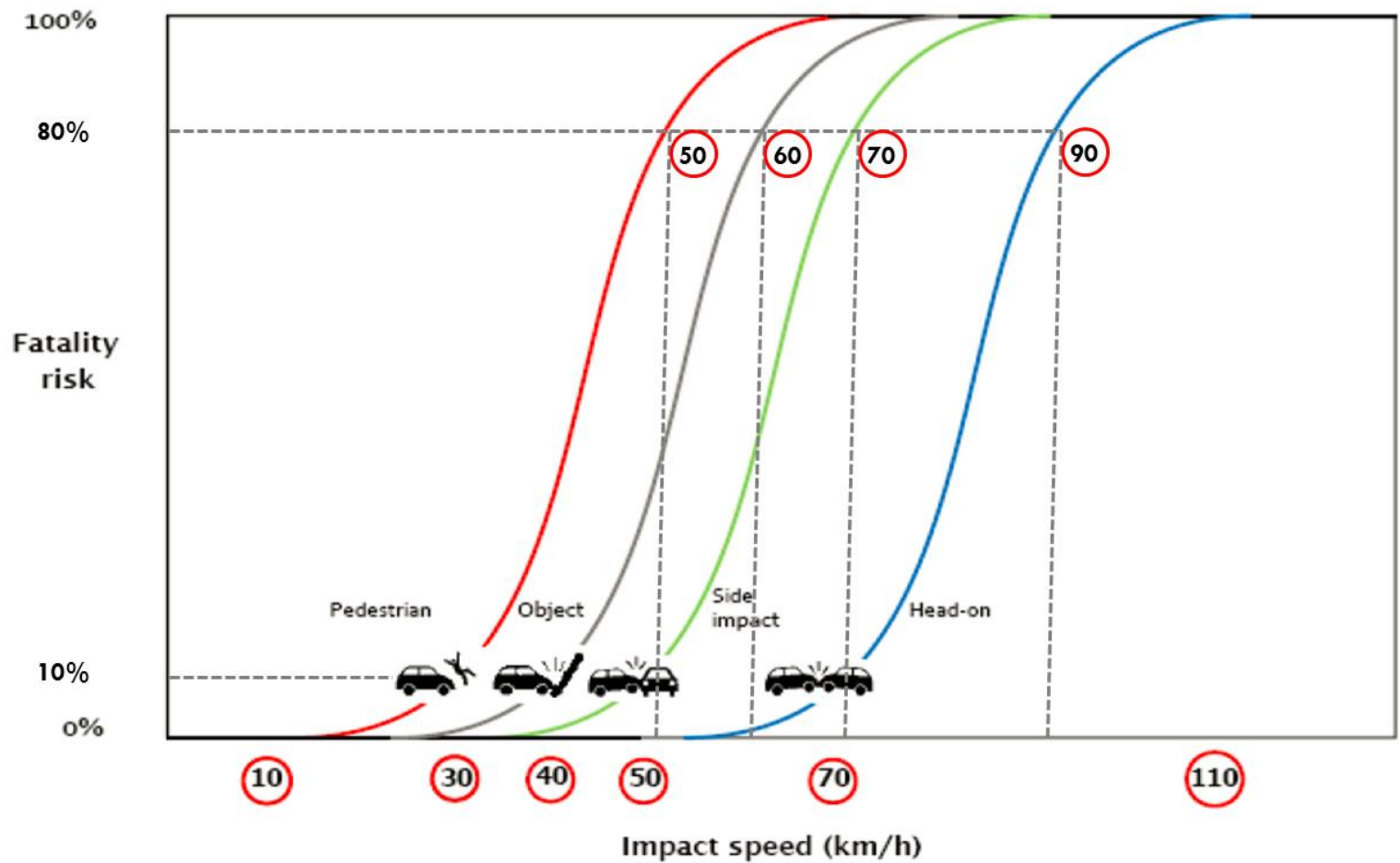


Safe System



Principles

- ❑ Limitations of human body to forces
- ❑ (Anticipating of) and forgiving of human error
- ❑ Joint responsibility (for all involved in managing roads)
 - ✓ Design
 - ✓ Build
 - ✓ Operate
 - ✓ Maintain
- ❑ All disciplines working together
- ❑ Evidence based



Risk = Speed

- ❑ Threshold impact speeds
- ❑ People not vehicles
- ❑ Different profile
- ❑ All about impact speed and conflict type
- ❑ Probability of being in casualty crash

Road Safety Management

Principles

- ❑ Vision Zero
- ❑ Mainstreaming
 - ✓ Resources
- ❑ Management tools
 - ✓ iRAP
 - ✓ Accountability
 - ✓ Key Performance Indicators (KPI) or Key Results Areas (KRA) ?
 - ✓ Role of CBR ?
- ❑ How do Road Safety Audits contribute ?

Safe System

Process or Outcome

- Safe System
 - ✓ Adopted by best practice jurisdictions
 - ✓ Recommended by UN
 - ✓ Anticipate and accommodate human error – does not blame the user
 - ✓ Acknowledge limited tolerance to force
 - ✓ Focus on reducing harm to people

 - ✓ Forgiving road and roadside
 - ✓ Safe speeds
 - ✓ Joint responsibility

Operating a Safe System is not business as usual



Road safety audits

Road Safety Audits and the Safe System

Road Safety Audits

Risk ?

Consider two approaches

1. Risk Management

- ❑ Accidents = risk management (Risk Matrix)
- ❑ ALARP
- ❑ RRRap

2. Safe Road

- ❑ Crashes = action (Haddon Matrix)
- ❑ Safe System questions
- ❑ Survivability thresholds (Safe System curves)

Should we accept that there will be death or serious injury or is the objective a Safe Road?

Road Safety Audits

Stages

- ❑ International practices
- ❑ The earlier the better:
 - ✓ Planning tool
 - ✓ Feasibility / concept
 - ✓ Value engineering / options
- ❑ No risk is out-of-scope:
 - ✓ Departures from Standard
 - ✓ Junction types

Road Safety Audits

Recommendations

- ❑ International practices
- ❑ Clearly defined roles and responsibilities
 - ✓ Road Safety Auditor?
 - ✓ Designer?
- ❑ The problem with recommendations?
 - ✓ Responsibility
 - ✓ Best solution
 - ✓ Exemptions ?
- ❑ Evidence-based road safety

Road Safety Audits

Process or Outcome

- ❑ What is the objective of a Road safety Audit
- ❑ The practice:
 - ✓ Evolved
 - ✓ Highly process focused
 - ✓ Reports include what is not in-scope
- ❑ Checklists

The process must be subordinate to the Outcome



Road safety audits

Way Forward

Road Safety Audits

Way Forward

- ❑ Role of road safety associations:
 - ✓ Advocate for best practice
 - ✓ Promote management accountability
 - ✓ Influencers
- ❑ Designer / Operator responsibility
 - ✓ Accountable for trauma on their roads
 - ✓ KPIs and KRAs
 - ✓ Road Safety Auditor as advisor and agitator

Road Safety Audits

Way Forward

- ❑ Role of road safety expert:
 - ✓ Comprehensive knowledge of how road safety performance is influenced (evidence based)
 - ✓ Engineering toolkits
 - ✓ Limitations of education programs to solve on-road problems
 - ✓ Role of enforcement (and how engineering can be used to support enforcement)
- ❑ Independent Safe System review
 - ✓ Focused on problems rather than recommendations



Over to you !