

Analytical Approaches in Vision Zero

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Purpose of accident analysis

A fact finding activity to learn from accidents in order to develop effective countermeasures to prevent the accidents or mitigate their consequences

The importance of accident models

- Historically accident analysis has been based on a *person approach*
- Focus on accident causation and the human component
- Accident analysis focus on the behaviour of the road user/users closest to the accident
- Resulting in behavioural shaping countermeasures

The importance of accident models (cont.)

- Vision Zero is based on a *systems approach*
- Humans cannot be “error free”
- Human error and injuries are treated as system failures
- Accident analysis focus on *both* accident and injury causation from a systems perspective
- Countermeasures related to all components and their interaction, but also to organisations influencing the design and use of the system

A simple example

- Why did the truck drive off the road?
 - Because the driver fell asleep (most accident analyses based on the person approach end here and the interventions are directed towards the driver behaviour).
- Why did the driver fall asleep?
 - Because he had volunteered to take an extra shift outside the permitted driving hours even though he was very tired (he needed the money).
- Why was the driver able to take the extra shift?
 - Because the employer did not have a management system or something similar to prevent the driver from driving outside the permitted driving hours.
- Why didn't the employer have a safety management system?
 - Because legislation does not provide that and consequently there is no authority supervision.

A simple example (cont.)

- Why was a rigid lamp post placed in close proximity to the road?
 - Because the regulations governing the design of the road permitted such a design.
- Why did the regulations permit such a design?
 - Because the road authorities do not have a systematic way of investigating crashes e.g. as a part of a safety management system.
- Why do the road authorities not need a safety management system?
 - Because politicians are unwilling to pass laws which may increase costs.

Need for additional data sources

- Statistical data
 - Often based on police reports
 - Superficial and aggregated data of the magnitude of a road safety problem and its distribution in time and space
 - Important for identifying and prioritizing problem areas
 - Limited value for the identification of contributing and underlying factors from a systems perspective

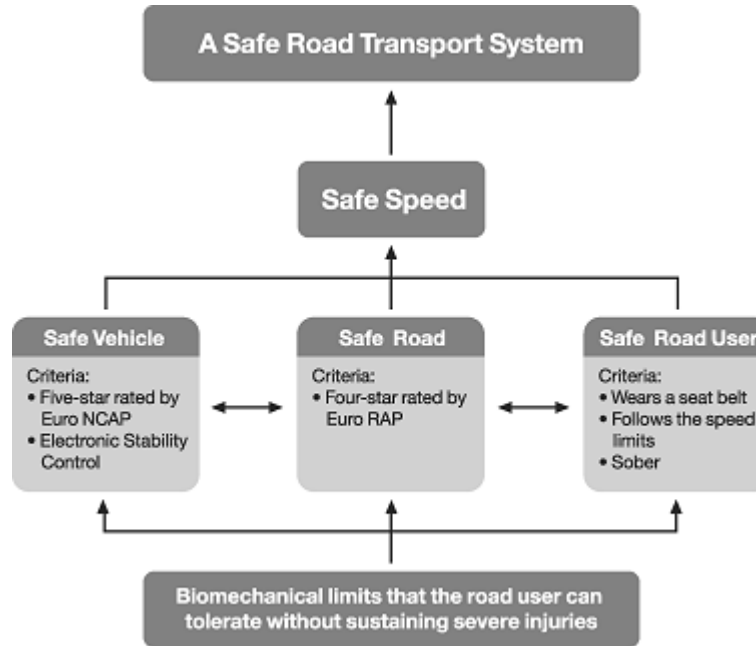
Need for additional data sources (cont.)

- STRADA (Swedish Traffic Accident Data Acquisition)
 - Brings together accident data from the police and injury data from hospitals
 - Provides more comprehensive information on accidents and injuries
 - Improves the problem of underreporting

Need for additional data sources (cont.)

- In-depth studies
 - Detailed investigation of individual road accidents with the aim to understand the accident and injury causation mechanisms in detail
 - Important tool for raising awareness among decision makers
 - Important tool in a road safety management system for identifying deviations

A safe road transport system



Relationship between data sources

