In-depth accident analyses in Norway

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• In Norway we have carried out systematic in-depth analyses of all fatal road accidents since 2005.
Pilot studies in 1999-2000

- Pilot studies with in-depth accident analyses teams were carried out in ten different counties in 1999-2000.

- One team investigated accidents with motorcycles, one studied accidents with bicycles, one team studied accidents involving pedestrians, one team studied head-on accidents, and several teams studied fatal accidents.
• We find that the pilot study has been positive and conclusive. It will in the future represent an interesting tool for the systematic road safety work at the Public Roads Administration.

• SINTEF recommends that the activity in the accident investigation teams continue their activity. It must, however, be decided how this activity can be incorporated in the ongoing road safety work.
• It was decided to establish one accident analyses team in each of the five regions, and one data collection group in each county

• It was decided that these accident analyses teams should analyse all fatal accidents
Analyses from 2005

• Guidelines were developed in spring 2004
• People were identified and trained in the autumn 2004
• Data collection and analyses started in January 2005
The difference between the police and the accident analyses groups

Accident

Find out what happened

Police investigation
- Define who is responsible

Accident analyses
- Prevent new accidents
Steering committee

Accident analysis group in each region

UG County 1
UG County 2
UG County 3
UG County N

UG = Data collection group in each country
Data collection groups

• **Competence**
  - Road, vehicle, road user

• **Tasks**
  - Visit the accident site (first one, then the group)
  - Collect data
  - Fill in forms
  - Send preliminary data to the Region and Directorate (24h)
  - Start describing the facts
  - Send preliminary report to the regional analyses team
Accident analyses teams

- **Competence**
  - Road, vehicle, road user, medical expert (from 2010)

- **Tasks**
  - Receive preliminary report
  - Carry out in-depth analyses
  - Prepare final report, with suggested countermeasures
  - Send final report to the Steering committee and the Directorate
  - Prepare a yearly report
Accident analysis

• Descriptive statistics at three levels; accident, vehicle and road user

• What causes the accidents?
  – Causes leading to the fatal accidents
  – Causes leading to the fatalities

• Different factors are available (about 70) related to
  – The road users
  – The road and road environment
  – The vehicle
Accident analysis

- One accident could have several factors that made the accident occur as well as several factors that influenced the severity.

- All factors are rated 1-3; Each number is multiplied by itself and cannot exceed the total sum of 15.
Reports

- Regional reports each year (since 2005)
- One national report each year summarising the data from the regions
- In 2009 all data were registered in a national database
- It was then possible to analyse data from 2005-2008
Results from four years with in-depth analyses (2005-2008)

- 875 fatal accidents with 955 killed
- 40% are killed in head-on collisions
- 33% are killed in run-off-the-road accidents
- 13% of the killed are pedestrians
Number of fatal accidents (2005 – 2008) where factors related to the road users, road conditions, vehicles or external condition have contributed to the accident

<table>
<thead>
<tr>
<th>Contributing factors</th>
<th>Number of accidents</th>
<th>Share of all accidents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factors related to the road users</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of driving skills</td>
<td>482</td>
<td>55 %</td>
</tr>
<tr>
<td>Excessive speeds related to the road/well above the speed limit</td>
<td>438</td>
<td>50 %</td>
</tr>
<tr>
<td>Intoxication</td>
<td>192</td>
<td>22 %</td>
</tr>
<tr>
<td>Tiredness/falling asleep</td>
<td>119</td>
<td>14 %</td>
</tr>
<tr>
<td>Illness</td>
<td>81</td>
<td>9 %</td>
</tr>
<tr>
<td>Suspected suicide</td>
<td>45</td>
<td>5 %</td>
</tr>
<tr>
<td>Factors related to road and road environment</td>
<td>246</td>
<td>28 %</td>
</tr>
<tr>
<td>Factors related to vehicles involved</td>
<td>160</td>
<td>18 %</td>
</tr>
<tr>
<td>Factors related to weather and road conditions</td>
<td>129</td>
<td>15 %</td>
</tr>
</tbody>
</table>
Factors leading to fatal accidents

- Wrong road user actions 55%
- Too high speed 50%
- Intoxication 22%
- Tiredness 14%
- Factors related to the road 28%
- Factors related to the vehicle 18%
- Factors related to the weather 15%
Factors leading to fatality

- Not used seat belt: 43% (of car occupants)
- Not used helmet: 64% (of cyclists)
- High speed: 49%
- Factors related to the road: 29%
- Factors related to the vehicle: 38%
Measures by NPRA central

- Road user: 32 (18+7)
- Vehicle: 22 (1+5)
- The road and road environment: 70
  - Run-off-the-road accidents: 22 (9+13)
  - Head-on collisions: 7 (4+1)
  - Cross sections: 6 (1+5)
  - Pedestrians/bicyclists: 9 (2+7)
  - Work at the road: 8 (0+8)
  - Road: 18 (5+13)
Implementing measures

• District level: considering local measures; long-term investments or quickly made measures (acute situations)

• Region level: Common measures across districts that need to be coordinated, e.g., revisions, inspections and controls, developing tools and methods etc.

• Road directorate: Common national measures are implemented in Handbooks, function contracts, communication work, change of external and internal teaching
2009 -

- The established electronic database with all national data, provide an opportunity to focus on particular themes

- Present research:
  - Fatal accidents with motorcycles
  - Fatal accidents with bicycles
  - Fatal accidents with heavy vehicles