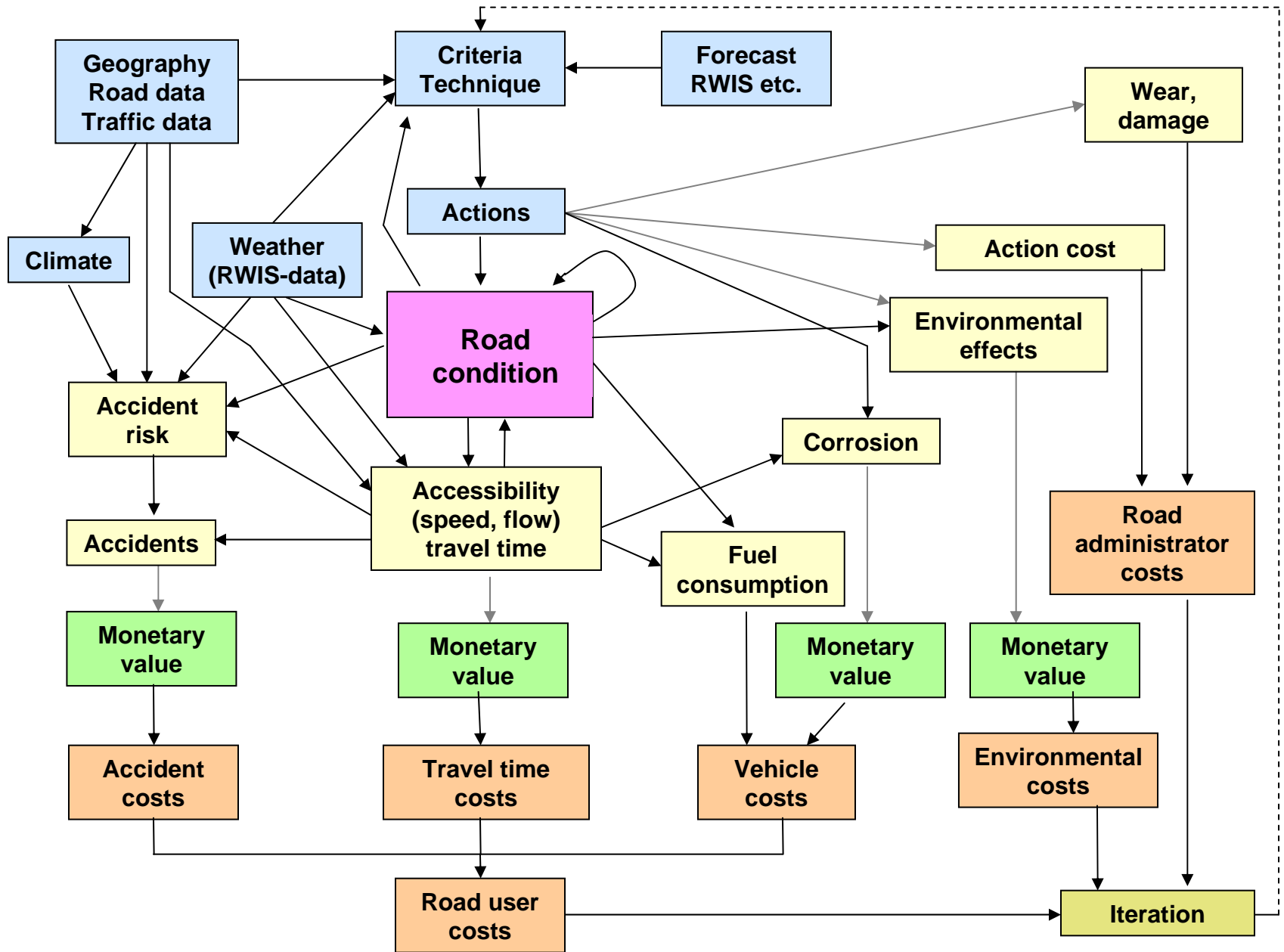


Winter Maintenance Management System Accident/Injury Risk for Different Road Users Recommendations due to Safety

**Gudrun Öberg
VTI, Linköping, Sweden**

VINTERMODELLEN - WMMS on Strategic Level

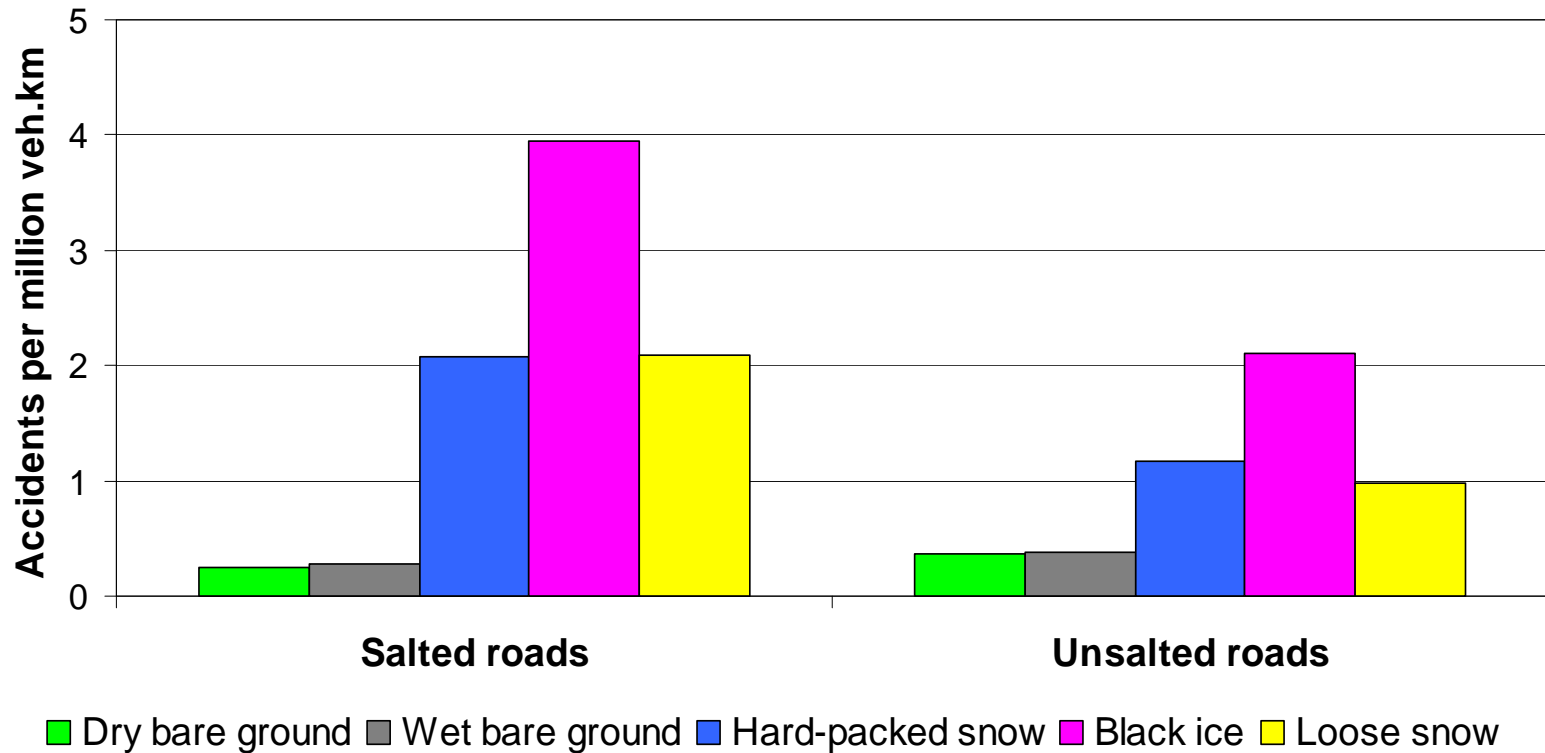


Speed reduction when **loose snow or slush in the wheel-paths** compared to dry surface:

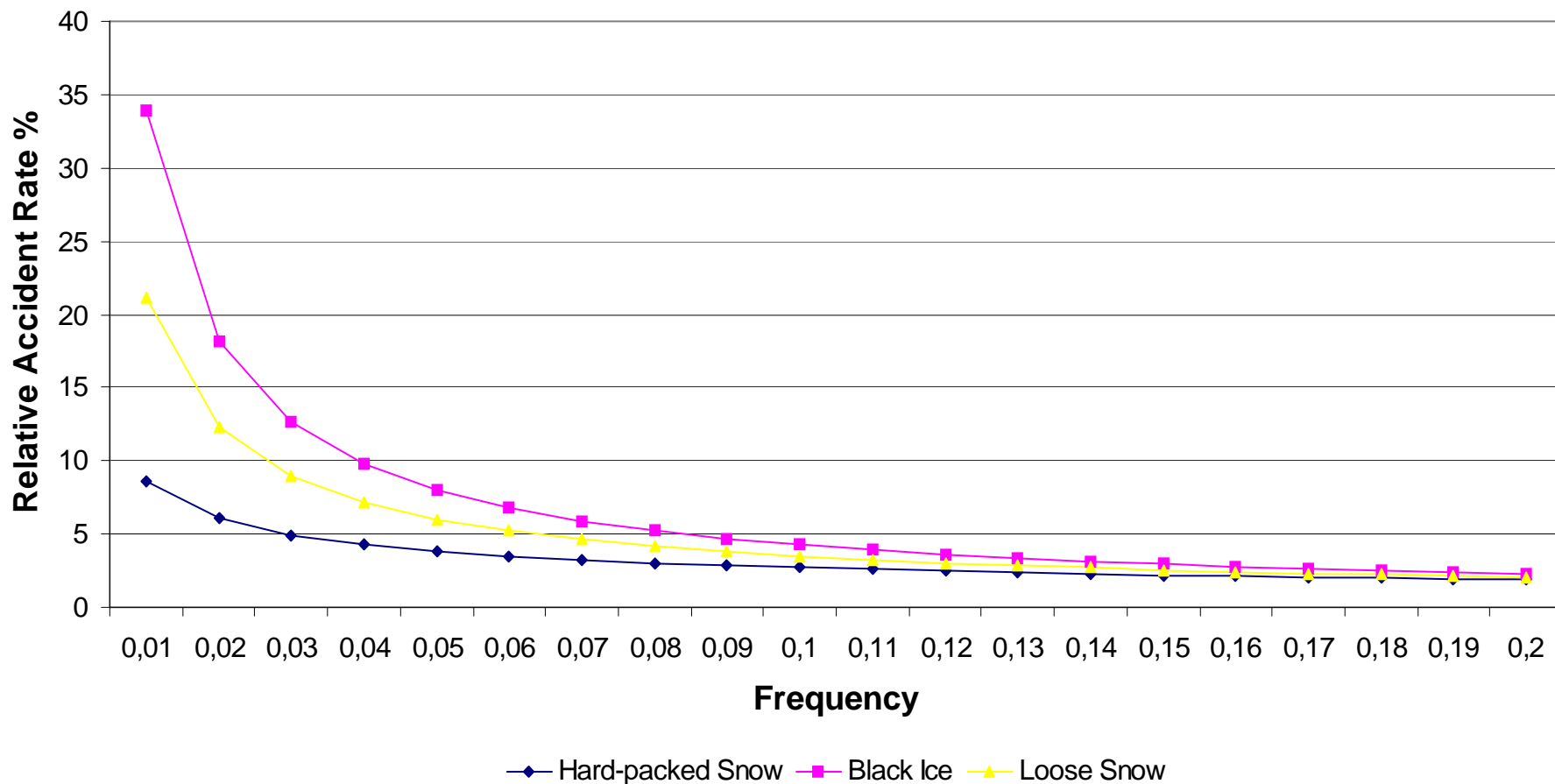
Fair weather: 10 %

Snowfall and limited visibility: 25 %

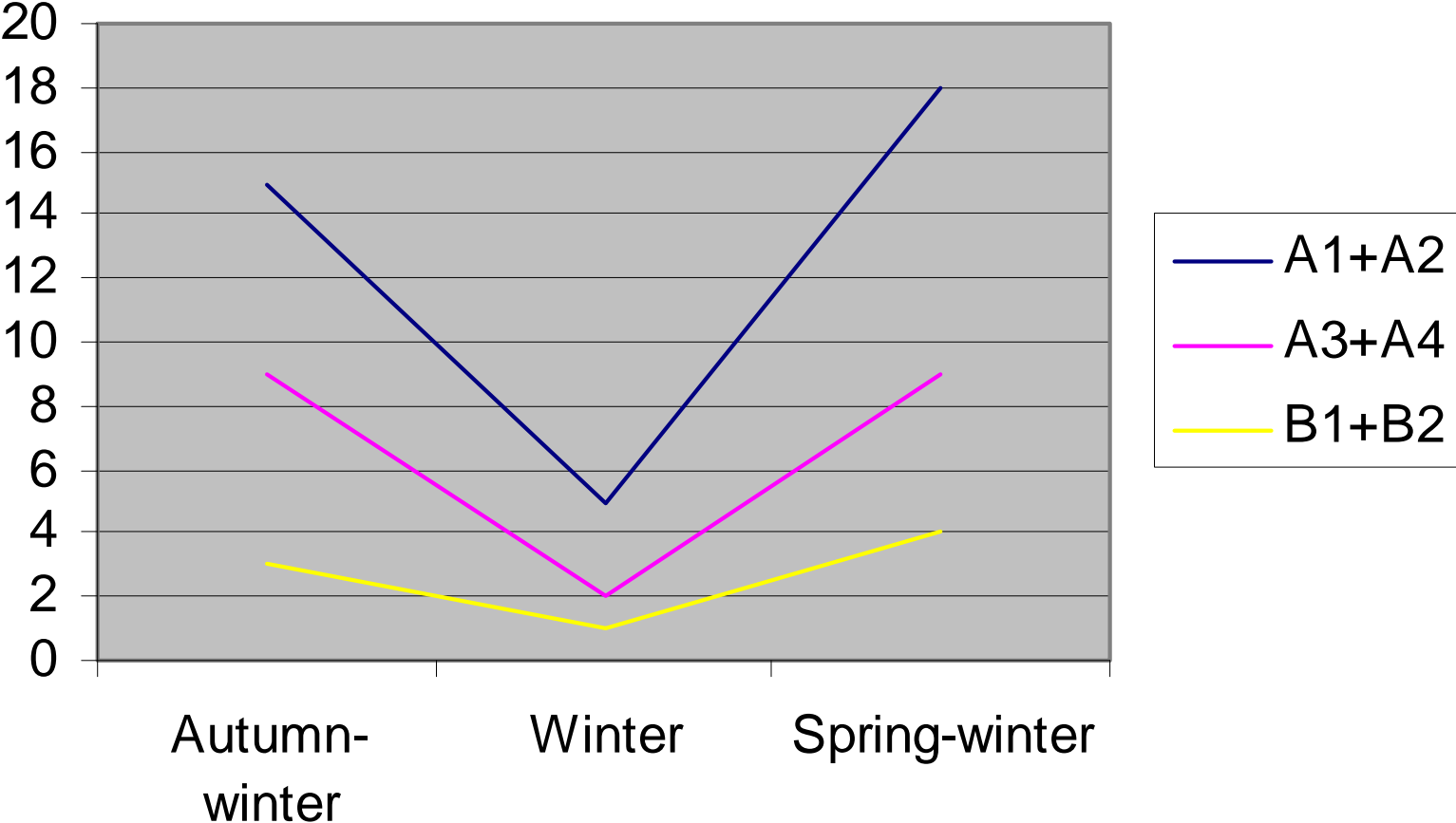
Sweden, accident rates at different roadway conditions



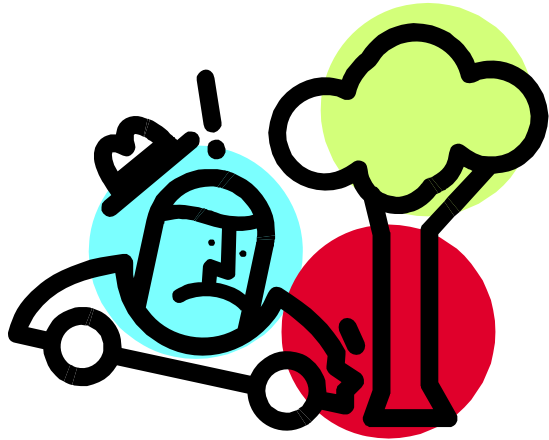
Accident rate Relative to Dry Roadway, Sweden All Accidents as well as Severe Accidents



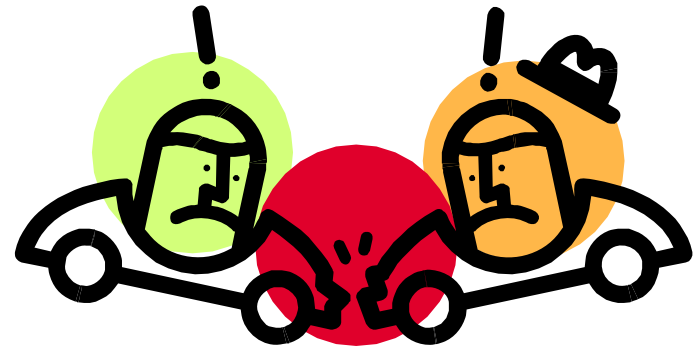
Accident Rate in Wintertime



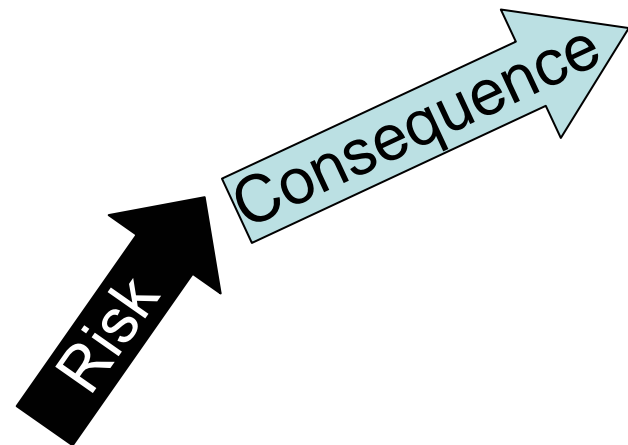
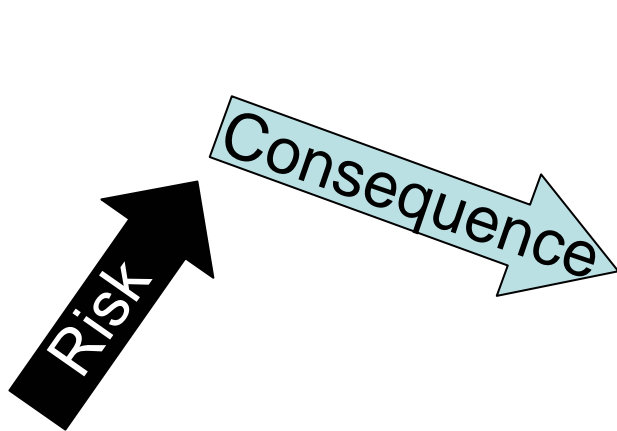
Different types of accidents



Single vehicle accidents



Head-on collisions



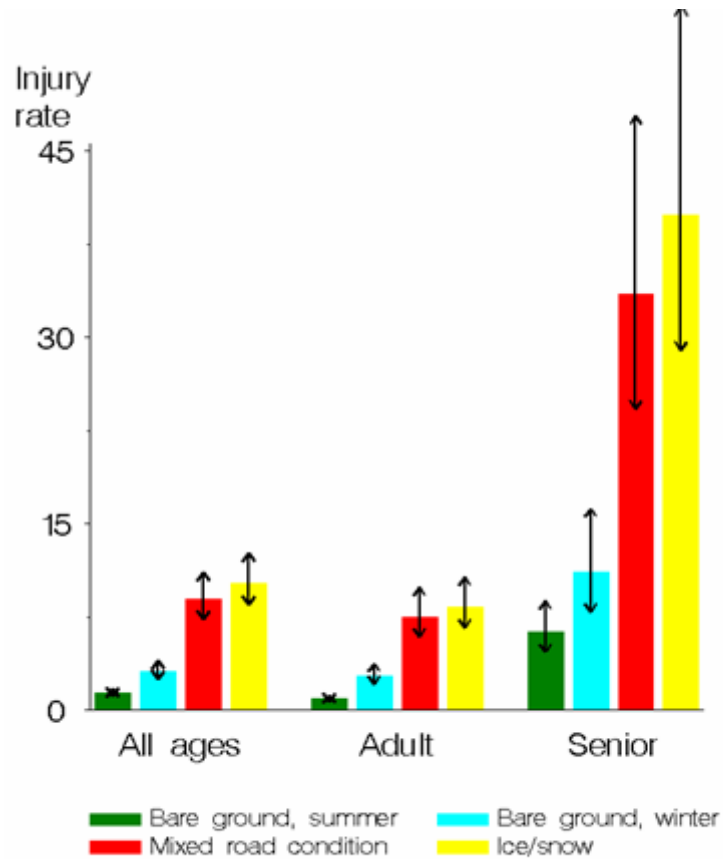
Recommendation to Road Authorities

- Better Winter Maintenance on Roads with High Winter Maintenance Standard

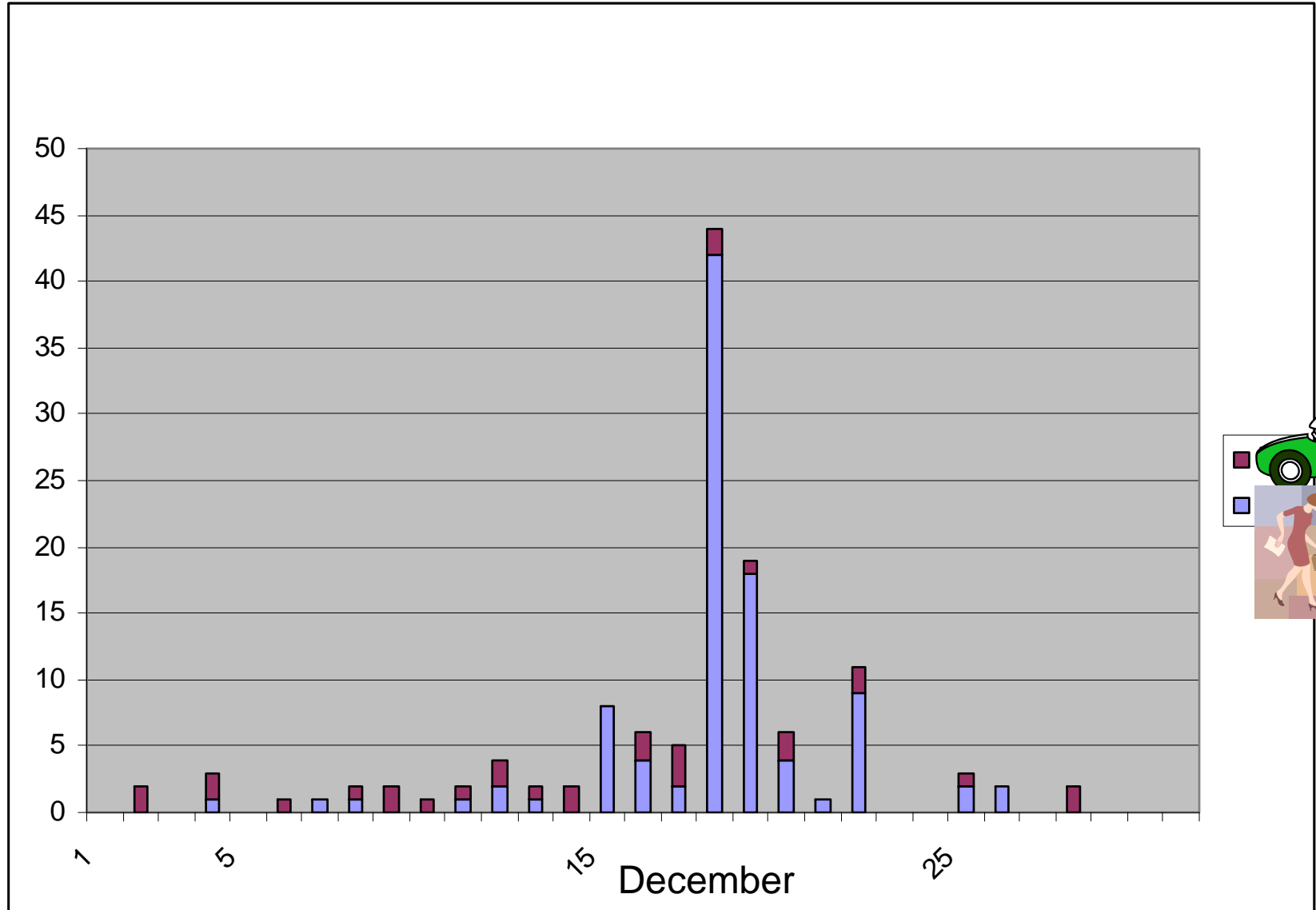
Recommendations to Drivers

- Put on Winter Tyres in Time. Best Back.
- Listen to Weather Prognosis/Traffic Information.
- Be Careful at Bridges, Lowland, along Rivers, Lakes.
- Listen to Tyre Sound.
- Test Braking

Pedestrians



Injured in Traffic Environment – Hospital Data



Recommendations to Road Authorities

- First, concentrate on improved winter road maintenance for pedestrians and secondly, an improved surface standard in bare ground conditions.
- The winter road maintenance should be of high and uniform standard.
- Provide more heated surfaces for pedestrians.
- Better winter road maintenance (stated in order of priority) should be provided for:
 - elderly pedestrians
 - adult pedestrians
 - elderly cyclists
 - adult cyclists
- Sand/gravel should be swept up as soon as possible after winter - above all on hills in cycle areas!

Recommendation to Pedestrians and to Cyclists

- Use Winter Shoes
- Use Reflex
- Lean on a Stick, Kíck-Sledge...
- Lower Tyre Pressure – Better Grip
- Look after the Light
- Use Helmet



8-12 February
International Winter Road Congress

BIENVENUE - WELCOME

Thank you for your attention!

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