IDENTIFICATION OF BLACK SPOTS FOR TRAFFIC INJURY IN ROAD INTERSECTIONS DEPENDENCE OF INJURY DEFINITION

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Introduction In Denmark it is common practice that road administrations use black spot identification methods in planning. Assumed black spots are further reviewed based on traffic volume, modes of transportation and other considerations. For our region hospital based geo-located traffic injury information has been available for about 20 years and in the current project the aim was to investigate whether different definitions of black spots (hot spots) would point at different intersections for further scrutiny.

Methods During the years 2002 to 2007 all 29 719 patient contacts due to traffic accidents treated at three hospitals for a region covering roughly 0.5 mio persons were recorded routinely and subsequently geo-coded to exact location. For 8191 injured persons the traffic accident occurred in one of 2157 road intersections. In total the county holds 56,994 intersections. Hot spots were defined as

1. The upper decile of injury generating intersections.
2. Intersections with at least one death or hospitalised patient.
3. The intersections covering the upper decile of injuries.

Results The three definitions in combination identified 295 injury burdened intersections. Only three intersections were identified by all three definitions. All intersections fulfilling definition three were also included in definition one. Definition two covered 103 intersections, only 22 of these were identified by definition one.

Conclusion The definition of Black spot has huge implications for identification of intersections considered as a black spot. GIS methods must take this into consideration.