

Heuristic Approaches for Injury Reductions by Reduced Car Use in Urban Areas

Authors : Stig H. Jørgensen, Trond Nordfjærn, Øyvind Teige Hedenstrøm, Torbjørn Rundmo

Abstract : The aim of the paper is to estimate and forecast road traffic injuries in the coming 10-15 years given new targets in urban transport policy and shifts of mode of transport, including injury cross-effects of mode changes. The paper discusses possibilities and limitations in measuring and quantifying possible injury reductions. Injury data (killed and seriously injured road users) from six urban areas in Norway from 1998-2012 (N= 4709 casualties) form the basis for estimates of changing injury patterns. For the coming period calculation of number of injuries and injury rates by type of road user (categories of motorized versus non-motorized) by sex, age and type of road are made. A prognosticated population increase (25 %) in total population within 2025 in the six urban areas will curb the proceeded fall in injury figures. However, policy strategies and measures geared towards a stronger modal shift from use of private vehicles to safer public transport (bus, train) will modify this effect. On the other side will door to door transport (pedestrians on their way to/from public transport nodes) imply a higher exposure for pedestrians (bikers) converting from private vehicle use (including fall accidents not registered as traffic accidents). The overall effect is the sum of these modal shifts in the increasing urban population and in addition diminishing return to the majority of road safety countermeasures has also to be taken into account. The paper demonstrates how uncertainties in the various estimates (prediction factors) on increasing injuries as well as decreasing injury figures may partly offset each other. The paper discusses road safety policy and welfare consequences of transport mode shift, including reduced use of private vehicles, and further environmental impacts. In this regard, safety and environmental issues will as a rule concur. However pursuing environmental goals (e.g. improved air quality, reduced co2 emissions) encouraging more biking may generate more biking injuries. The study was given financial grants from the Norwegian Research Council's Transport Safety Program.

Keywords : road injuries, forecasting, reduced private care use, urban, Norway

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