| 04 | ICD-BASED INJURY SEVERITY FOR LAND TRANSPORT TRAUMA |

MR Bambach, RJ Mitchell, RH Grzebieta, A Williamson. *Transport and Road Safety (TARS) Research, UNSW, Australia*

Background Land transport crashes are responsible for a large proportion of injury-related morbidity and subsequent disability. The accurate identification of land transport morbidity is essential to inform and evaluate countermeasures and policy.

Aims/Objectives/Purpose To develop and compare ICD-based non-fatal injury severity measures, in order to accurately define injury severity resulting from land transport crashes.

Methods All land transport hospital admissions and fatalities from 2001 to 2007 in New South Wales, Australia, were examined. Previously published limitations of the ICD-based International Classification Injury Severity Score (ICISS) were addressed by: including multiple admissions and deaths that occurred outside hospital using data linkage; including comorbidity and age; and accounting for multiple injuries, using multiplicative or worst injury methods. The performance of the different approaches in predicting mortality was assessed with multivariate logistic regression, by comparing the discrimination, calibration and goodness-of-fit.

Results/Outcomes There were 109 843 land transport hospital admissions during the study period, of which 3471 were fatalities. The inclusion of age and comorbidity improved the prediction of mortality for all ICISS methods. The inclusion of multiple admissions and deaths outside hospital substantially improved the performance of ICISS. ICISS determined from the worst injury had improved discrimination and goodness-of-fit compared with the multiplicative method, for individuals with multiple injuries. The superior ICISS approach demonstrated excellent predictive power (concordance of 0.950).

Significance/Contribution to the Field ICISS is a robust predictor of mortality for land transport trauma. Superior performance was achieved with the worst injury method, and including age, comorbidity, multiple admissions and deaths outside hospital.