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Background Road trauma identified using hospital admission records and/or police-reported crashes are susceptible to changes in policy and resourcing. Divergence between the incidence of police and hospital reported road trauma trends needs to be explored, as this may have an impact on the development and evaluation of road safety policy.

Aim To compare the temporal trends in police, hospital, and linked police-hospital records for non-fatal road trauma for road users by injury severity.

Method Temporal trends for road users were examined in: (i) hospital admission, (ii) police-reported crashes, and (iii) linked police-hospital records during 2001–2009 in New South Wales, Australia by injury severity. Injury severity was identified using the International Classification of Diseases Injury Severity Scores (ICISS).

Results Hospital records showed significantly increasing injury trends for motorcyclists and pedal cyclists (6.3% and 5.5%) and significantly decreasing trends for motor vehicle occupants and pedestrians (1.7% and 2.2%) per year. These trends were similar for linked hospital-police data, except for pedal cyclists. In police-reported crashes, there were significant decreases for pedal cycle, motor vehicle and pedestrian casualty rates (1.5%, 3.8% and 5.2%), and a significant increase for motorcyclists (1.8%) each year. Serious injury (ICISS greater than 0.965) showed less fluctuation in injury trends over time than more minor injuries.

Significance Differences in the annual percent change over time between hospital and police-reported crashes are evident which may influence policymaking. Motorcycle trauma were increasing 3.5-fold using hospital admissions compared to police-reported crashes, while pedal cyclists showed divergent trends between data collections.