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Trends in serious injury due to road vehicle traffic crashes, Australia 2001 to 2010



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*Authoritative information and statistics
to promote better health and wellbeing*

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australian Standard Geographic Classification
BITRE	Bureau of Infrastructure, Transport and Regional Economics
DIRD	Department of Infrastructure and Regional Development
ICD	International classification of diseases
ICD-10-AM	International classification of diseases, 10th revision, Australian modification
ICISS	ICD-based Injury Severity Score
MV	motor vehicle
NCCH	National Centre for Classification in Health
NHMD	National Hospital Morbidity Database
RVTC	road vehicle traffic crash
SLA	statistical local area
SRR	survival rate ratio

Symbols

n.p.	not publishable because of small numbers, confidentiality, or other concerns about the quality of the data
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Summary

This report presents estimates of trends in the number and rate of persons seriously injured in Australia due to road vehicle traffic crashes. Serious injury is defined as cases where a person was admitted to hospital for an injury and was discharged alive. Cases involving types of injury that are life-threatening are the main focus. Deaths are not included.

Trends in serious injury

Over the 10-year period from 2001 to 2010, age-standardised rates for people seriously injured due to a road vehicle traffic crash fluctuated but increased overall, from 141.6 to 146.4 per 100,000 population, an average annual increase of 0.9%.

All jurisdictions except for Victoria, South Australia and Tasmania showed increases in age-standardised rates of serious injury due to road vehicle traffic crashes over the 10-year period. Victoria was the only jurisdiction to record a statistically significant decrease.

Trends in life-threatening injury

Over one-quarter (26%) of those seriously injured due to road vehicle traffic crashes over the 10-year period from 2001 to 2010 sustained life-threatening injuries.

The highest rates were for people aged 15–24 years, for both males and females. The largest increase over the 10-year period was for males aged 45–64 years.

Rates of life-threatening cases involving motorcycle riders and pedal cycle riders rose significantly over this period, with average annual increases of 5.2% and 7.5% respectively. Rates of cases involving passengers of motor vehicles and pedestrians fell, with average annual decreases of 1.2% and 1.0% respectively.

For males injured as motorcycle riders, rates in all age groups, except those aged 0–4 years and 15–24 years, increased over the 10-year period. The largest average annual increases in rates were recorded in the age groups 45–64 years and 65 years and over, with average annual increases of 13.2% and 14% respectively. For females injured as motorcyclists, increases occurred for those aged 14–24 years, 25–44 years and 45–64 years.

Injuries per registered motorcycle did not change much from 2001 to 2010, suggesting that the rise in population-based rates is largely due to growth in the number of motorcycles in use.

Rates also rose for males and females injured as pedal cycle riders, in age groups 25–44 years and 45–64 years, as well as for males aged 65 years and over. The largest average annual increase in rates for males and females was recorded for those aged 45–64 years, with average annual increases of 14.1% for males and 15.7% for females.

The overall rise for males aged 45–64 years is accounted for by the rise in injuries sustained as a motorcyclist or pedal cyclist. In 2001, 31% of all high-threat-to-life road injuries sustained by males aged 45–64 years occurred while they were riding motorcycles or pedal cycles. This proportion rose to over 58% in 2010.

Increases in life-threatening road injury were greater for people living in remote areas (average annual increase of 3.7%) than for those living in *Major cities* and *Outer regional* areas.

1 Introduction

The main purpose of this publication is to provide information on trends in the numbers and rates of people seriously injured in Australia in unintentional road vehicle traffic crashes (RVTC) in the decade from 2001 to 2010. Most of the report focuses on cases in which the injuries were life-threatening. While the focus of the report is traffic injuries, it also provides some information on non-traffic injuries involving road vehicles.

Traffic and non-traffic injury cases

Traffic injury cases are those in which a person was injured in an unintentional transport crash or other event on a public road or in a related area, such as an adjacent footpath. Road vehicles include motor vehicles and pedal cycles. Pedestrians injured in events involving road vehicles are also included. Seriously injured occupants of a train or a tram are included if their injury was due to a collision with a motor vehicle and occurred in a road traffic setting, such as at a railway level crossing or a tram crossing. Persons injured as animal riders or as occupants of animal-drawn vehicles were not included because available data on hospitalisations do not specify whether these cases occurred in traffic or not.

Road safety agencies commonly use the term 'serious road injury' when referring to injuries from a road crash that result in admission to a hospital. 'Road injury' has similar scope to road vehicle injury cases that occur 'in traffic', as reported in data on hospitalisations.

Non-traffic injury cases are those in which a person was injured in an unintentional transport crash involving vehicle(s) that could travel on a road, but in which the crash occurs entirely in any place other than a public road or related area.

The system used to classify injury cases admitted to hospitals in Australia is the Australian clinical modification of the tenth revision of the system commonly known as the International Classification of Diseases (ICD-10-AM) (NCCH 2010, and earlier editions). The ICD-10-AM codes for unintentional injuries involving land transport include categories for cases due to events that occurred in traffic (on a public highway or street), or elsewhere (non-traffic). An explanation of these categories is provided in Appendix B.

Intent of injury

The ICD-10-AM categories used to select cases for this report do not include cases that involved road vehicle injuries if they were reported as being due to intentional self-harm, assault or undetermined intent. That is, only unintentional (or accidental) injury is included.

Serious and high-threat-to-life injury

Serious injury is defined for this report as an injury that resulted in the person being admitted to hospital and subsequently discharged alive, either on the same day or after a stay of one or more nights in a hospital. Deaths in hospital and elsewhere are excluded in order to minimise overlap between cases reported here and cases reported elsewhere as road deaths.

The main focus of this report is the subset of serious injury cases that meet a definition of presenting high threat to life. High-threat-to-life cases were selected on the basis of having an

ICD-based Injury Severity Score (ICISS) of less than 0.941. ICISS is a measure of injury severity based on a patient's injury diagnoses, and the proportion of all cases with each individual diagnosis where the person died in hospital. The ICISS measure used for this report is based on ICD-10-AM coding and was derived using Australian hospital separations data (Stephenson et al. 2004). More detail on the ICISS method is provided in Appendix B. For brevity, high-threat-to-life injuries are also referred to in this report as 'life threatening' injuries.

Trend analysis

Confidence intervals (CIs) are provided for estimated trends of annual average change in rates presented in this report. The annual values underlying the trend estimates are subject to random variation, which can be large when case numbers are small. Further information is provided in Appendix B. Only trends found to be statistically significant (with 95% confidence intervals) have been presented in this report.

Report structure

Chapters 2–4 provide summaries of findings and commentary on trends from 2001 to 2010 for the following topics:

- Chapter 2: Serious injury due to RVTC
- Chapter 3: Life-threatening injury due to RVTC
- Chapter 4: Life-threatening injury due to non-traffic road vehicle crashes.

Tables and figures supporting these three chapters, respectively, are in sections 5.2, 5.3 and 5.4 of Chapter 5 Tables and Figures. All values presented in figures in Chapter 5 but not also tabulated in that chapter are provided in tables presented in Appendix A.

Chapters 3 and 4 present information by 'case type'. The case types summarise how people were travelling when injured:

- by motor vehicle (other than a motor cycle)
- by motorcycle
- by pedal cycle
- as a pedestrian.

Two subgroups are also provided for the first category, namely motor vehicle drivers and motor vehicle passengers. Inclusion criteria for the case types are given in Appendix B.

In order to provide context for the data that are the focus of this report, brief summary information is provided on total serious land-transport cases (Table 5.1.1) and on deaths due to road vehicle traffic crashes (RVTCs) (Table 5.2.1).

The term 'land transport' refers to any device designed primarily for, or being used at the time primarily for, conveying persons or goods from one place to another over land.

2 Trends in serious injury due to road vehicle traffic crashes, 2001 to 2010

This chapter reports on serious injuries due to road vehicle traffic crashes (RVTCs), and shows how many of the cases were life-threatening. Tables and figures referred to in this chapter are in section 5.2.

2.1 Overview

There was an average annual increase of 0.9% per year (95% CI: 0.8%, 1.1%) in age-standardised rates of people seriously injured due to an RVTC during the period 2001 to 2010 (Table 5.2.1). A similar average annual increase of 1.1% (95% CI: 0.9%, 1.4%) was seen for people seriously injured with high threat to life. The latter group comprised about one-quarter (26%) of those seriously injured due to a road crash. While increases were seen in the RVTC injury rate for the 10-year period as a whole, the rate in 2010 was the lowest since 2004.

Contrasting with these increases was a decrease in the number of road deaths averaging -3.8% per year (95% CI: -3.3%, -4.4%) over the 10-year period from 2001 to 2010 (Table 5.2.1).

2.2 State or territory of usual residence

Victoria was the only jurisdiction to have a statistically significant decrease in age-standardised rates of serious injury due to involvement in an RVTC over the 10-year period. South Australia and Tasmania showed no statistically significant changes in rates, and increases were present for the other five jurisdictions (Table 5.2.2 and Figure 5.2.1). The Northern Territory recorded the highest annual rates of any jurisdiction throughout the 10-year period, with annual rates 20%–55% above the national rate.

All jurisdictions except Queensland and South Australia had increases in age-standardised rates of life-threatening injury due to involvement in an RVTC over the 10-year period (Table 5.2.3 and Figure 5.2.1). The Northern Territory had the highest annual rates of life-threatening injuries over the period, with rates about double the national rate. (Annual rates of change by state or territory of usual residence are presented in tables C1.2 and C1.3 in Appendix C.)

3 Trends in high-threat-to-life injury due to road vehicle traffic crashes, 2001 to 2010

This chapter reports on life-threatening injuries due to RVTCS. (Tables and figures referred to in this chapter are available in section 5.3 of this report.)

3.1 Case numbers and population-based rates

The number of people seriously injured with high threat to life remained relatively steady over the 10-year period from 2001 to 2010 for all case types except motorcycle riders and pedal cycle riders, which increased (Table 5.3.1).

Age-standardised rates of life-threatening cases involving motorcycle riders and pedal cycle riders had average annual rates of increase of 5.2% (95% CI: 4.6%, 5.7%) and 7.5% (95% CI: 6.6%, 8.3%), respectively. There was no significant trend in rates for people injured as drivers of motor vehicles. Those injured as pedestrians and as passengers of motor vehicles recorded average annual decreases of -1.0% (95% CI: -0.3%, -1.7%) and -1.2% (95% CI: -0.7%, -1.8%), respectively.

Similar information is presented by state or territory of usual residence in Table 5.3.2 (case counts) and figures 5.3.2–5.3.4 (population-based age-standardised rates). Jurisdictional trends were generally similar to national trends. Statistically significant average annual rates of change for each case type by state or territory of usual residence are summarised. (Note that the smaller numbers of cases at jurisdictional level compared to national level can result in a given trend being statistically significant at national level while not being so in a particular jurisdiction.)

- *Motor vehicle drivers.* Increase: Western Australia 1.8% (95% CI: 0.4%, 3.2%) and Tasmania 2.8% (95% CI: 0.3%, 5.4%). Decrease: South Australia -2.4% (95% CI: -1.1%, -3.7%) (Figure 5.3.2).
- *Motor vehicle passengers.* Increase: Northern Territory 3.5% (95% CI: 0.3%, 6.7%). Decrease: South Australia -3.6% (95% CI: -1.8%, -5.4%); Queensland -2.4% (95% CI: -1.1%, -3.7%); and New South Wales -1.7% (95% CI: -0.6%, -2.7%) (Figure 5.3.2).
- *Motorcycle riders.* Increase: Northern Territory 8.1% (95% CI: 3.7%, 12.6%); Western Australia 7.7% (95% CI: 5.7%, 9.6%); and Australian Capital Territory 7.4% (95% CI: 2.9%, 12.1%). Smaller increases were present in all other jurisdictions except Tasmania (Figure 5.3.3).
- *Pedal cycle riders.* Increase: Australian Capital Territory: 16.5% (95% CI: 10.0%, 23.3%). All of the states also showed smaller increases. Rates for the Northern Territory, based on small case numbers, fluctuated and did not show a significant trend (Figure 5.3.3).
- *Pedestrians.* Decrease: Victoria -1.5% (95% CI: -0.2%, -2.8%) (Figure 5.3.4).

3.2 Rates based on number of registered vehicles

Rates based on numbers of registered vehicles were calculated for life-threatening injury cases that occurred in traffic while the injured person was a motor vehicle occupant or a motor cycle rider (tables 5.3.3 and 5.3.4; figures 5.3.5 and 5.3.6). The rates for motorcycle riders were around 10 times as high as equivalent rates for occupants of other motor vehicles. This type of rate cannot be calculated for pedal cycle riders (because registration requirements do not apply to pedal cycles), nor pedestrians.

Rates of life-threatening motor vehicle occupant traffic injuries per 10,000 registered motor vehicles were similar for residents of all jurisdictions except the Northern Territory, for whom the rates were about twice as high as elsewhere. Much the same is seen for rates of life-threatening motorcycle rider traffic injuries per 10,000 registered motorcycles.

The registered vehicle-based rates for motor vehicle occupants and for motor cycle riders decreased over the period from 2001 to 2010 (Table 5.3.3 and Figure 5.3.5). Note that rates for the last year in the period were lower than for any other year in the period for Australia as a whole, and for the three states with the largest populations (Table 5.3.3). Rates can be expected to fluctuate from year to year, especially in the smaller-population jurisdictions. (Annual rates of change by case type are presented in Table C1.6 in Appendix C.)

The trend in population-based rates of life-threatening traffic injury for motorcycle riders was compared with the trend in rates based on numbers of registered motor cycles (Table 5.3.4 and Figure 5.3.6). Note that registration-based rates in this figure and table are presented per 1,000 registered motorcycles (rather than per 10,000, as elsewhere in the report) to allow use of the same vertical scale as for the population-based rates. Rates per 100,000 population increased markedly over the period, while rates per 1,000 motorcycle registrations changed much less. That is, injuries per registered motorcycle did not change much from 2001 to 2010, suggesting that the rise in population-based rates is largely due to growth in the number of motorcycles in use. In contrast, for cases of life-threatening traffic injury involving other motor vehicles, both types of rate decreased slightly in the study period (tables 5.3.3 and A1.1).

3.3 Remoteness of usual place of residence

Rates of life-threatening injury showed different trends according to the remoteness of the injured person's usual residence from an urban centre. Rates for people living in *Remote* areas had the highest rate of increase over the 10-year period from 2001 to 2010, with an average annual rate of increase of 3.7% (95% CI: 2.1%, 5.3%). People living in *Major city* and *Inner regional* areas had smaller average annual rates of increase (Figure 5.3.7). The rates for people living in *Outer regional* and *Very remote* areas did not show significant trends, but rates for residents of *Very remote* areas were higher than for any other region throughout the study period.

The number of cases of life-threatening injury due to RVTC was tabulated by state or territory of usual residence and remoteness area within the jurisdiction for each year in the period 2001 to 2010 (Table 5.3.6). Note that some remoteness areas are not present in some jurisdictions and that case counts are small for the more remote areas, reflecting the relatively small populations of these areas.

Case numbers for the *Major city* areas were sufficiently large in all of the six jurisdictions in which that remoteness area is present to allow calculation of trends. Trends in

age-standardised rates of life-threatening traffic injury for people residing in *Major city* areas within those six jurisdictions are presented in Figure 5.3.8. The largest average annual rate of increase was 4.9% (95% CI: 2.8%, 7.0%) in the Australian Capital Territory, followed by 3.4% (95% CI: 2.3%, 4.6%) in Western Australia. *Major city* areas in all other jurisdictions had smaller increases, except in South Australia where there was no significant change.

3.4 Age and sex

Overview

Population-based rates of life-threatening traffic injury differed between males and females and according to age.

For both males and females throughout the study period, rates were highest for those aged 15–24 years (Figure 5.3.9). The age groups with the next highest rates were 25–44 years for males and 65 years and older for females. Rates were markedly higher for males than females in the age groups 15–24 years and 25–44 years.

Trends in rates over the study period also varied by sex and age group.

The most pronounced increase was for males aged 45–64 years, with an average annual increase of 5.8% (95% CI: 5.1%, 6.5%). Males aged 25–44 years, and 65 years and over, also had increases in rates over the 10-year period, though they were less steep than at ages 45–64 years.

Females aged 65 years and over also showed an increase, averaging 1.5% per year (95% CI: 0.6%, 2.5%). However, younger adult females had either a decline (ages 15–24 years), or no significant trend (25–44 years).

Rates for males and females aged less than 15 years decreased over the period, most rapidly for those aged 0–4 years (males –5.4% per year [95% CI: –2.1%, –8.6%], and females –4.2% [95% CI: –0.4%, –7.9%]).

Motor vehicle occupants

Within traffic injuries as a whole, rates of life-threatening injury for motor vehicle occupants changed relatively little between 2001 and 2010 for both males and females, and within age groups (Figure 5.3.10).

One exception to this was a decrease for males aged 15–24, which averaged –2.5% per year over the 10-year period (95% CI: –1.8%, –3.2%), and was steeper from 2006 onwards. Trends for males at other ages were not significant.

A second notable exception was the increase for female motor vehicle occupants aged 65 years and over of 1.9% (95% CI: 0.8%, 3.1%). However, decreases were present for females in all other age groups, except for those aged 5–14 years.

Motorcycle riders

Rates of life-threatening traffic injuries involving motorcycle riders were much higher for males than for females (see Figure 5.3.11 – note that the scale for the vertical axis is different for males than for females to accommodate the much larger rates for males).

For males, rates were highest and similar for age groups 15–24 and 25–44 years throughout the 10-year study period.

The largest increases in rates of life-threatening motorcyclist traffic injury were for the age groups 45–64 years and 65 years and over, for which the average annual increases in rates were 13.2% (95% CI: 11.8%, 14.6%) and 14.0% (95% CI: 10.0%, 18.1%), respectively. In 2001, the rate for the 45–64 year group was about one-third that of the younger age groups; by 2010 it had risen to almost equal the rates in the younger age groups (Figure 5.3.11).

For females, enough cases to enable calculation of fairly stable trends only occurred in the three age groups: 15–24, 25–44 and 45–64 years. Rates were similar in these three age groups, and increases were found for all of them. The steepest increase was for women aged 45–64 years (10.8% per year; 95% CI: 6.8%, 15.0%), followed by women aged 15–24 years (5.7%; 95% CI: 1.3%, 10.2%).

It is important to note that a significant proportion of life-threatening injuries to motorcycle riders occur in off-road settings, particularly among younger age groups (Figure 5.3.12).

In the latter half of the period covered by this report, about one-third of the motorcycle riders with life-threatening injury were reported to have been injured in non-collision transport events, which include falling or being thrown from a motorcycle without a prior collision. By comparison, non-collision events were reported for about one-fifth of motor vehicle occupant cases.

Pedal cycle riders

Overall, and for all of the age groups presented, rates of life-threatening traffic injury sustained as a pedal cycle rider were much higher for males than for females (see Figure 5.3.14 – note that the scale for males is different to that for females to accommodate the much higher rates for males).

The pattern of rates by age group changed markedly during the period covered by the report. In 2001, the highest rates were for the two youngest age groups (5–14 and 15–24), for both males and females. By 2010, the highest rate for males was at ages 45–64 years, and for females the highest rates were at ages 25–44 and 45–64 years.

Males aged 45–64 years and 65 years and over recorded the steepest increases in rates over the 10-year period, with average annual increases of 14.1% (95% CI: 12.2%, 15.9%) and 12.0% (95% CI: 9.1%, 15.2%), respectively (Figure 5.3.14). Males aged 25–44 years showed a smaller rate of increase while rates for males aged 5–14 years and 15–24 years did not change to a significant extent.

For females, it was also the age group 45–64 years for which the steepest increase in rates occurred over the 10-year period, an average annual increase of 15.7% (95% CI: 10.9%, 20.6%). Females aged 25–44 years also had a smaller rate of increase, while those at other ages did not show a significant trend in rates.

As with motorcycle riders, it is important to note that a significant proportion of life-threatening injuries of pedal cycle riders occur in off-road settings, particularly in younger age groups (Figure 5.3.15).

In the latter half of the period covered by this report, about one-third of the pedal cycle riders with life-threatening injury were reported to have been injured in non-collision

transport events, which include falling or being thrown from a pedal cycle without a prior collision.

Pedestrians

Rates were highest in the age groups 65 years and older and 15–24 years for both males and females (Figure 5.3.17). The rates at ages 65 years and older were similar for males and females, particularly in the most recent years included in the report. Rates in the 15–24 age group were nearly twice as high for males compared to females.

Rates in most age-sex groups showed no significant trends over the 10-year period. The exceptions were decreases for males aged 0–4 years and for both males and females at 5–14 years: -6.6% per year on average (95% CI: -1.0%, -12.0%), -6.7% (95% CI: -4.0%, -9.3%) and -6.2% (95% CI: -2.7%, -9.6%), respectively.

High-threat-to-life injuries of males aged 45–64 years

In the 10-year period commencing 2001, the group with the largest increase in rate of life-threatening traffic injuries was males aged 45–64 years, with an overall rise of more than 40% (Figure 5.3.9).

The pattern of circumstances in which males aged 45–64 years sustained life-threatening traffic injuries changed greatly during the period. The rate of such injuries sustained as a motorcyclist was more than 2.5 times as high in 2010 as it was in 2001, and the rate of injuries sustained as a pedal cyclist tripled (figures 5.3.11 and 5.3.14). In contrast, the rate of life-threatening road injuries sustained in all other circumstances, combined, changed little.

So, all of the overall rate rise for males aged 45–64 years was accounted for by the rises in injuries sustained as a motorcyclist or a pedal cyclist. In 2001, these two categories made up 31% of all life-threatening traffic injury cases for males aged 45–64 years. By 2010, this proportion had risen to 58% (Figure 5.3.18).

3.5 Heavy transport vehicles and buses

At the end of the 10-year period, the annual number of cases of life-threatening traffic injuries resulting from incidents involving a heavy transport vehicle or a bus was higher than at the beginning, although case numbers were relatively small and fluctuated from year to year (Table 5.3.14).

Occupants of heavy transport vehicles

During the 10-year period, 52% of people who sustained life-threatening traffic injuries while occupants of heavy transport vehicles (excluding buses) were injured in non-collision traffic events, such as a vehicle overturning without colliding with another vehicle (Table 5.3.15). A further 18% of the injuries were sustained in collisions with other heavy transport vehicles and 14% in collisions with fixed or stationary objects.

Bus occupants

During the 10-year period, 49% of people with life-threatening traffic injuries sustained while they were bus occupants were injured in a non-collision transport event, while a further 18% were injured in a collision with a car, pick-up truck or van (Table 5.3.16). The

annual numbers of people injured were generally too small to allow determination of any trends, although there was a modest peak halfway through the study period in the number of people injured in collisions with a car, pick-up truck or van, together with an increase in cases due to non-collision transport events.

Occupants of other vehicles

This section covers people injured in events involving heavy transport vehicles and buses who were occupants of vehicles other than the heavy transport vehicles and buses when injured.

In the period from 2001 to 2010, almost two-thirds (65%) of these people seriously injured with high threat to life in a traffic crash with a heavy transport vehicle or bus were occupants of a car (Table 5.3.17). A further 15% were pedestrians and 11% were motorcycle riders. The annual number injured remained relatively constant overall over the 10-year period, although there were fluctuations from year to year, especially for the less frequent categories.

4 Trends in high-threat-to-life injury due to road vehicle non-traffic crashes, 2001 to 2010

This chapter reports on life-threatening injuries due to unintentional road vehicle crashes that occurred in a non-traffic setting. (The tables and figures referred to in this chapter are available in section 5.3, for motorcycle riders and pedal cycle riders, and section 5.4, for all modes of transport.)

4.1 Motorcycle riders

Most life-threatening traffic injuries involving young motorcycle riders were recorded as occurring in a non-traffic situation. Of people aged 5–14 years who sustained life-threatening injuries while riding a motorcycle in the period 2001 to 2010, the proportion who did so in a non-traffic (off-road) setting ranged from 64% to 84% (Figure 5.3.12). Of life-threatening motorcyclist injuries at ages 15–24 years, non-traffic crashes accounted for between 41% and 49% in the years 2001 to 2010.

As with traffic cases, males aged 15–24 years had the highest age-specific rates of non-traffic life-threatening motorcyclist injuries and males aged 45–64 years had the steepest increase in rates, with an average annual increase of 6.5% (95% CI: 4.4%, 8.8%; Figure 5.3.13). Males aged 5–14 years and 25–44 years had smaller rates of increase; no significant trends were present for males aged 15–24 years, and 65 years and over.

Females aged 15–24 years had an increase in rates over the 10-year period, with an average annual increase of 5.7% (95% CI: 0.5%, 11.1%). No significant changes in rates were found for females in any of the other age groups, though case numbers were low for some age groups.

4.2 Pedal cycle riders

More than one-half of the cases in which a person aged 5–14 years sustained life-threatening injuries while riding a pedal cycle occurred in non-traffic settings (Figure 5.3.15). The proportion of cases that were non-traffic-related varied from 50% to 62% in the years included in this report. For people aged 15–24 years, non-traffic crashes accounted for between 41% and 51% of all high-threat-to-life injuries sustained as a pedal cycle rider in the years 2001 to 2010.

Age-specific rates of non-traffic life-threatening pedal cyclist injuries fluctuated for both males and females during the 10-year period, and mostly did not show significant trends (Figure 5.3.16). Rates were highest for those aged 5–14 years in both sexes. Males aged 45–64 years showed the largest increase in rates over the period, with an average annual increase of 6.5% (95% CI: 4.1%, 9.1%). Males aged 15–24 years and 25–44 years showed smaller increases in rates. For females, those aged 5–14 showed an average decrease in rates of 5.6% per year (95% CI: -0.6%, -10.4%).

4.3 Other modes of transport

There was a decrease over the same 10-year period in the number of people seriously injured while motor vehicle passengers in a non-traffic situation. Rates of cases where the person was driving a motor vehicle, or was a pedestrian, did not show significant trends (Table 5.4.1; figures 5.4.1 and 5.4.3).

4.4 State or territory of usual residence

Information on life-threatening injuries from non-traffic road vehicle crashes by state or territory of usual residence is presented in Table 5.4.2 (case counts) and figures 5.4.1–5.4.3 (population-based age-standardised rates). Statistically significant trends for each case type by state or territory of usual residence are summarised below.

- *Motor vehicle drivers*. Decrease: Victoria: -8.3% per year (95% CI: -6.0%, -10.6%); Queensland: -4.0% (95% CI: -1.9%, -6.1%); South Australia: -5.4% (95% CI: -1.7%, -8.9%) (Figure 4.4.1).
- *Motor vehicle passengers*. Decrease: South Australia: -11.0% per year (95% CI: -5.7%, -14.9%); Western Australia: -7.1% (9% CI: -2.8%, -11.2%); Queensland: -6.8% (95% CI: -4.1%, -9.4%). New South Wales and Victoria had smaller decreases (Figure 4.4.1).
- *Motorcycle riders*. Increase: Northern Territory 6.2% per year (95% CI: 0.3%, 12.5%); Tasmania: 5.8% (95% CI: 0.9%, 10.9%). New South Wales, Victoria and South Australia had smaller increases (Figure 4.4.2).
- *Pedal cycle riders*. Increase: Australian Capital Territory 13.2% per year (95% CI: 6.7%, 20.1%); New South Wales 3.6% (95% CI: 1.8%, 5.4%) (Figure 4.4.2).
- *Pedestrians*. Decrease: South Australia: 5.5% per year (95% CI: 0.1%, 10.5%) (Figure 4.4.3).

Case counts of life-threatening injuries due to non-traffic crashes by state or territory of usual residence and remoteness area over the period from 2001 to 2010 are presented in Table 5.4.3.

5 Tables and figures

5.1 Trends in serious injury due to unintentional land transport crashes, 2001 to 2010

Table 5.1.1: Counts and age-standardised rates for people seriously injured due to unintentional land transport crashes by severity of injury, Australia, 2001 to 2010

Indicator	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Seriously injured	45,830	45,697	45,918	47,615	50,373	51,453	51,637	52,985	53,238	50,907
Rate ^(a)	236.1	232.8	231.2	237.2	247.8	249.7	246.2	247.4	243.2	228.8
Seriously injured with high threat to life	10,498	10,085	10,233	10,492	11,492	11,585	11,877	12,115	12,595	11,875
Rate ^(a)	54.1	51.3	51.4	52.0	56.2	55.7	56.1	56.0	56.8	52.6

(a) Rates are per 100,000 population per year, adjusted by direct standardisation to the Australian population in June 2001.

5.2 Trends in serious injury due to road vehicle traffic crashes, 2001 to 2010

Overview

Table 5.2.1: Road vehicle traffic crashes – serious and high-threat-to-life injury counts and rates, Australia, 2001 to 2010

Indicator	Year ^(a)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Deaths ^(b)	1,737	1,715	1,621	1,583	1,627	1,598	1,603	1,437	1,488	1,352
Rate ^(c)	9.0	8.7	8.2	7.9	8.0	7.7	7.6	6.7	6.8	6.1
Seriously injured	27,482	27,958	28,446	28,886	30,597	32,288	32,552	33,524	33,692	32,775
Rate ^(c)	141.6	142.4	143.1	143.6	150.1	156.2	154.6	155.7	153.0	146.4
Seriously injured with high threat to life	7,213	6,961	7,196	7,280	7,848	8,248	8,494	8,543	8,895	8,456
Rate ^(c)	37.2	35.4	36.1	36.1	38.4	39.6	40.1	39.4	40.1	37.4

(a) Indicates year of crash for deaths and year of hospitalisation for the seriously injured.

(b) Deaths data from the Bureau of Infrastructure, Transport and Regional Economics (BITRE) Australian Road Deaths Database <www.bitre.gov.au/statistics/safety/fatal_road_crash_database.aspx>.

(c) Rates are per 100,000 population per year, adjusted by direct standardisation to the Australian population in June 2001.

Note: Annual rates of change corresponding to this table can be found in Table C1.1 in Appendix C.

State or territory of usual residence

Table 5.2.2: Road vehicle traffic crashes – serious injury counts and rates by state or territory of usual residence, Australia, 2001 to 2010

State or territory of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW										
Count ^(a)	8,535	8,813	8,920	9,263	9,777	10,410	9,810	9,894	9,977	10,139
Rate ^(b)	130.2	133.5	134.2	138.5	145.2	153.3	142.4	140.9	139.5	139.9
Vic										
Count ^(a)	8,157	8,028	8,052	7,838	8,329	8,273	8,796	8,879	8,606	8,636
Rate ^(b)	169.2	164.5	162.8	156.6	164.2	160.7	167.4	165.2	156.5	153.7
Qld										
Count ^(a)	4,915	5,169	5,250	5,556	5,900	6,319	6,545	7,042	7,074	6,242
Rate ^(b)	135.0	139.0	137.7	142.4	147.9	154.6	156.2	163.6	159.8	138.9
WA										
Count ^(a)	2,028	1,975	2,169	2,333	2,333	2,618	2,782	2,964	3,161	3,228
Rate ^(b)	106.1	101.8	110.9	117.1	115.4	126.7	131.2	135.7	140.1	139.8
SA										
Count ^(a)	2,225	2,313	2,288	2,149	2,271	2,466	2,480	2,401	2,407	2,369
Rate ^(b)	149.3	153.9	151.6	141.3	148.4	158.7	158.4	151.7	149.5	144.6
Tas										
Count ^(a)	587	586	585	598	715	749	709	730	689	537
Rate ^(b)	127.4	127.7	127.0	127.9	152.6	158.1	148.3	152.6	141.9	110.9
ACT										
Count ^(a)	267	256	311	320	459	506	513	609	628	578
Rate ^(b)	82.2	77.5	92.5	95.4	133.6	147.2	142.8	170.9	171.4	155.2
NT										
Count ^(a)	408	440	458	435	366	518	462	536	535	541
Rate ^(b)	196.1	204.8	222.7	204.9	179.7	237.1	208.7	230.4	229.4	225.7
Total^(c)										
Count ^(a)	27,482	27,958	28,446	28,886	30,597	32,288	32,552	33,524	33,692	32,775
Rate ^(b)	37.2	35.4	36.1	36.1	38.4	39.6	40.1	39.4	40.1	37.4

(a) Count = Number of seriously injured people.

(b) Rates are per 100,000 population per year, adjusted by direct standardisation to the Australian population in June 2001.

(c) Includes cases for other territories such as Cocos (Keeling) Islands, Norfolk Island and Christmas Island, and cases where state or territory of usual residence is not specified.

Note: Annual rates of change corresponding to this table can be found in Table C1.2 in Appendix C.

Table 5.2.3: Road vehicle traffic crashes – high-threat-to-life injury counts and rates by state or territory of usual residence, Australia, 2001 to 2010

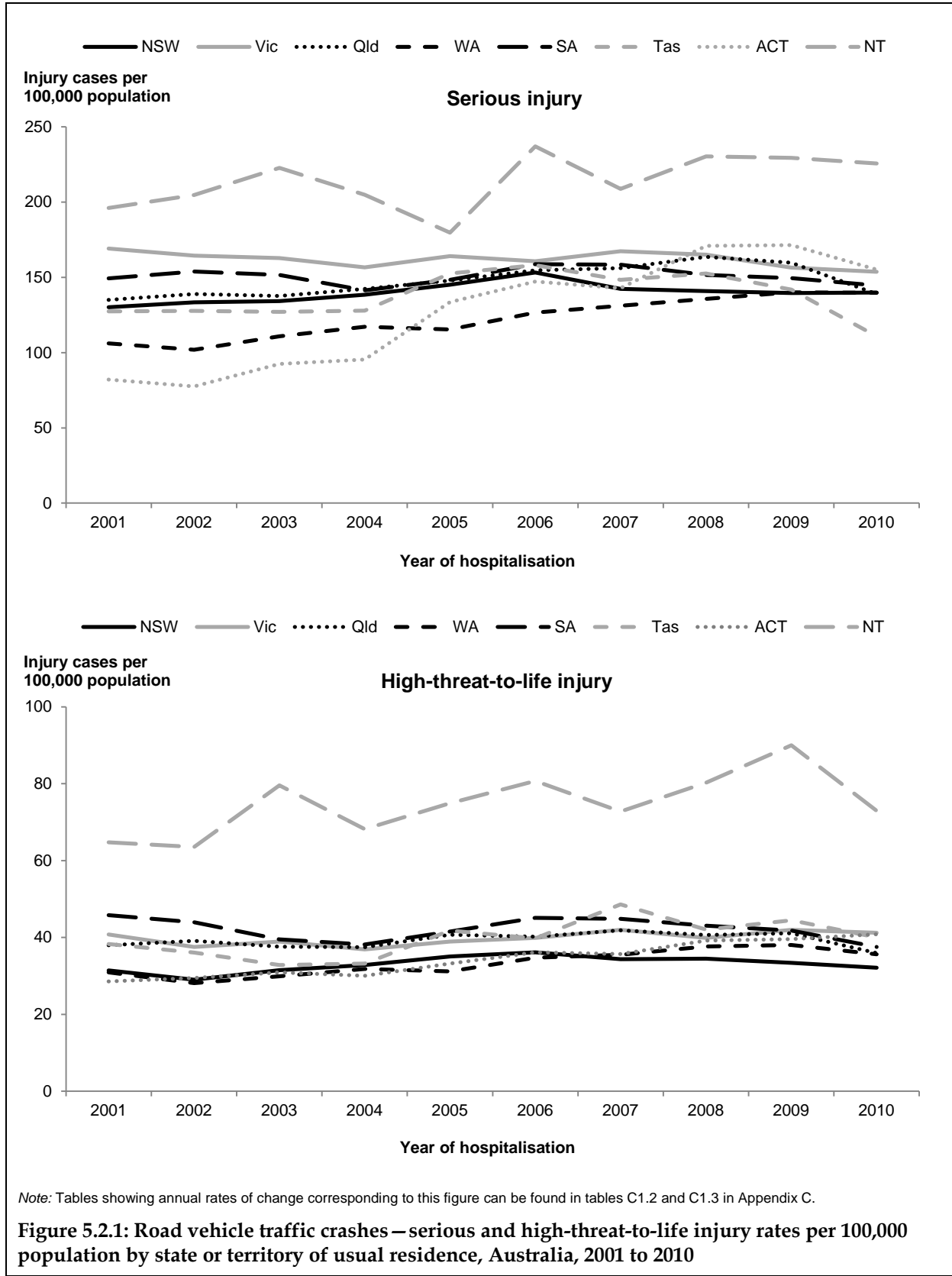
State or territory of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW										
Count ^(a)	2,063	1,922	2,103	2,208	2,378	2,473	2,394	2,452	2,421	2,364
Rate ^(b)	31.4	29.0	31.5	32.8	35.0	36.1	34.4	34.5	33.4	32.2
Vic										
Count ^(a)	1,970	1,838	1,930	1,859	1,986	2,067	2,219	2,164	2,327	2,344
Rate ^(b)	40.8	37.6	38.9	36.9	39.0	39.9	42.0	39.9	42.0	41.2
Qld										
Count ^(a)	1,377	1,452	1,432	1,459	1,623	1,645	1,759	1,755	1,832	1,621
Rate ^(b)	38.0	39.2	37.6	37.5	40.7	40.2	41.9	40.7	41.1	35.9
WA										
Count ^(a)	588	546	582	633	630	720	758	824	860	823
Rate ^(b)	30.9	28.2	29.9	31.8	31.2	34.8	35.5	37.7	38.0	35.7
SA										
Count ^(a)	689	667	599	581	644	713	704	692	680	631
Rate ^(b)	45.8	44.0	39.5	38.2	41.6	45.1	44.9	43.1	41.8	37.6
Tas										
Count ^(a)	177	167	151	158	194	191	234	202	223	195
Rate ^(b)	38.3	36.1	32.8	33.2	41.8	39.8	48.6	42.1	44.5	40.0
ACT										
Count ^(a)	90	96	101	98	114	124	131	137	145	151
Rate ^(b)	28.6	29.4	31.0	30.0	33.2	36.2	35.7	39.2	39.6	40.9
NT										
Count ^(a)	135	136	156	142	150	177	154	184	208	170
Rate ^(b)	64.8	63.5	79.6	68.2	74.9	80.7	72.8	80.3	90.0	73.0
Total^(c)										
Count ^(a)	7,213	6,961	7,196	7,280	7,848	8,248	8,494	8,543	8,895	8,456
Rate ^(b)	37.2	35.4	36.1	36.1	38.4	39.6	40.1	39.4	40.1	37.4

(a) Count = Number of people seriously injured with high-threat-to-life.

(b) Rates are per 100,000 population per year, adjusted by direct standardisation to the Australian population in June 2001.

(c) Includes cases for other territories such as Cocos (Keeling) Islands, Norfolk Island and Christmas Island, and cases where state or territory of usual residence is not specified.

Note: Annual rates of change corresponding to this table can be found in Table C1.3 in Appendix C.



5.3 Trends in high-threat-to-life injury due to road vehicle traffic crashes, 2001 to 2010

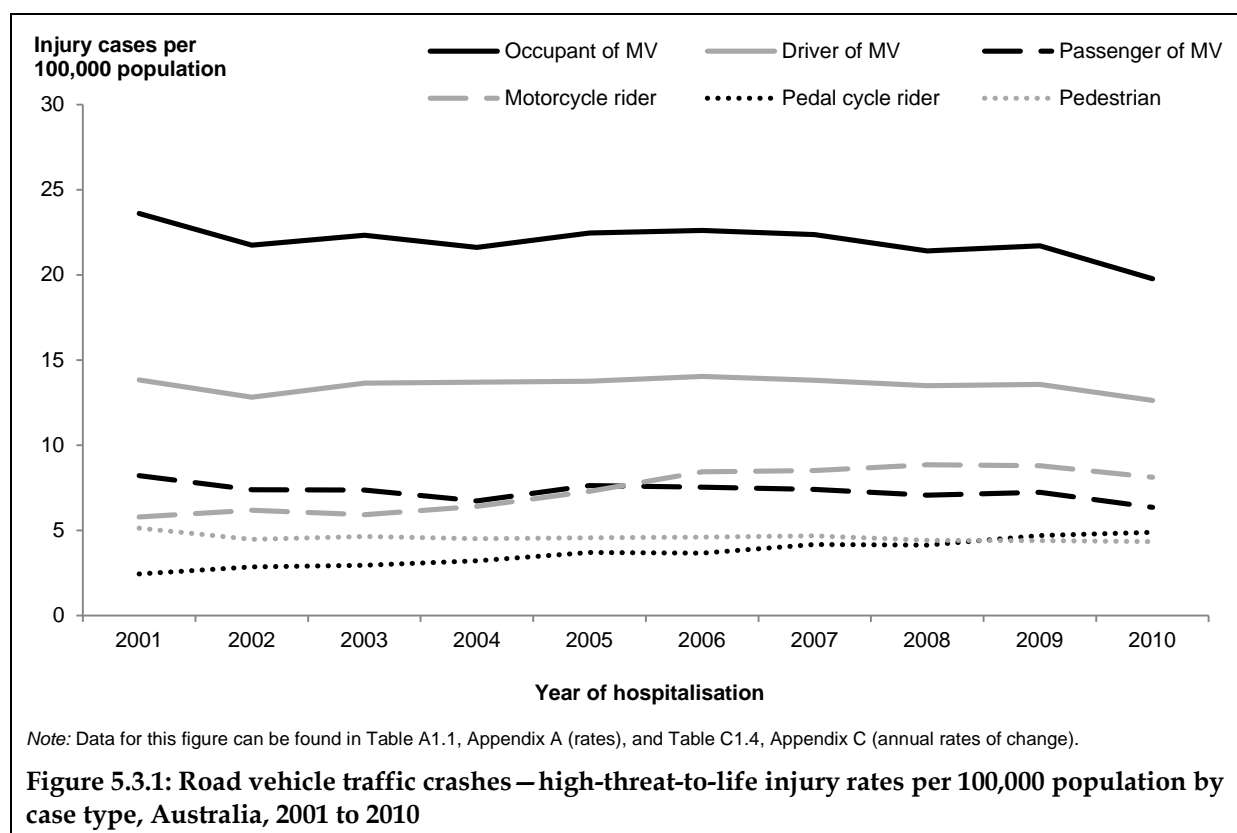
Case types

Table 5.3.1: Road vehicle traffic crashes – high-threat-to-life injury counts by case type, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Occupant of MV ^{(a)(b)}	4,584	4,278	4,457	4,369	4,608	4,719	4,758	4,660	4,843	4,487
Driver	2,685	2,525	2,723	2,772	2,833	2,935	2,944	2,944	3,037	2,872
Passenger	1,595	1,452	1,467	1,356	1,558	1,568	1,565	1,530	1,602	1,434
Motorcycle rider	1,122	1,211	1,172	1,285	1,479	1,737	1,787	1,905	1,943	1,814
Pedal cycle rider	475	562	585	647	754	760	879	889	1,031	1,098
Pedestrian	995	882	928	912	936	965	995	963	978	990
Other or unknown	37	28	54	67	71	67	75	126	100	67
Total	7,213	6,961	7,196	7,280	7,848	8,248	8,494	8,543	8,895	8,456

(a) Occupants of motor vehicles except motorcyclists.

(b) Includes cases where injured person was an occupant of a motor vehicle but it was not stated whether the person was a driver or a passenger.



Case type by state or territory of usual residence

Table 5.3.2: Road vehicle traffic crashes – high-threat-to-life injury counts by state or territory of usual residence and case type, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW										
Occupant of MV ^{(a)(b)}	1,251	1,166	1,230	1,254	1,372	1,336	1,294	1,282	1,271	1,210
<i>Driver</i>	754	644	745	818	834	872	827	805	777	790
<i>Passenger</i>	416	434	412	371	479	414	389	424	429	365
Motor cycle rider	328	319	319	393	440	528	496	536	558	536
Pedal cycle rider	133	164	192	184	219	233	242	259	244	281
Pedestrian	338	267	345	356	322	352	341	333	313	318
Other or unknown	13	6	17	21	25	24	21	42	35	19
Vic										
Occupant of MV ^{(a)(b)}	1,265	1,124	1,230	1,173	1,212	1,226	1,277	1,248	1,309	1,294
<i>Driver</i>	807	720	785	789	790	796	847	812	892	876
<i>Passenger</i>	403	344	394	339	376	393	382	403	393	380
Motor cycle rider	271	288	282	280	315	375	395	409	421	380
Pedal cycle rider	130	140	158	171	208	201	252	231	314	355
Pedestrian	301	279	249	225	244	258	277	257	266	300
Other or unknown	n.p.	7	11	10	7	7	18	19	17	15
Qld										
Occupant of MV ^{(a)(b)}	848	831	872	828	859	915	905	884	923	835
<i>Driver</i>	469	483	539	516	532	556	550	566	573	535
<i>Passenger</i>	291	279	273	235	280	288	297	267	293	258
Motor cycle rider	261	331	311	316	406	418	465	490	517	421
Pedal cycle rider	108	137	109	152	166	146	175	189	207	219
Pedestrian	148	147	128	142	174	144	195	155	160	135
Other or unknown	12	6	12	21	18	22	19	37	25	11
WA										
Occupant of MV ^{(a)(b)}	384	351	356	395	374	417	448	460	498	437
<i>Driver</i>	205	202	208	219	221	241	250	284	296	255
<i>Passenger</i>	154	128	129	155	124	151	172	159	176	165
Motor cycle rider	90	99	104	123	136	167	162	204	176	216
Pedal cycle rider	42	45	40	53	51	54	75	68	101	79
Pedestrian	69	50	78	58	65	77	67	80	82	80
Other or unknown	n.p.	n.p.	n.p.	n.p.	n.p.	5	6	12	n.p.	11

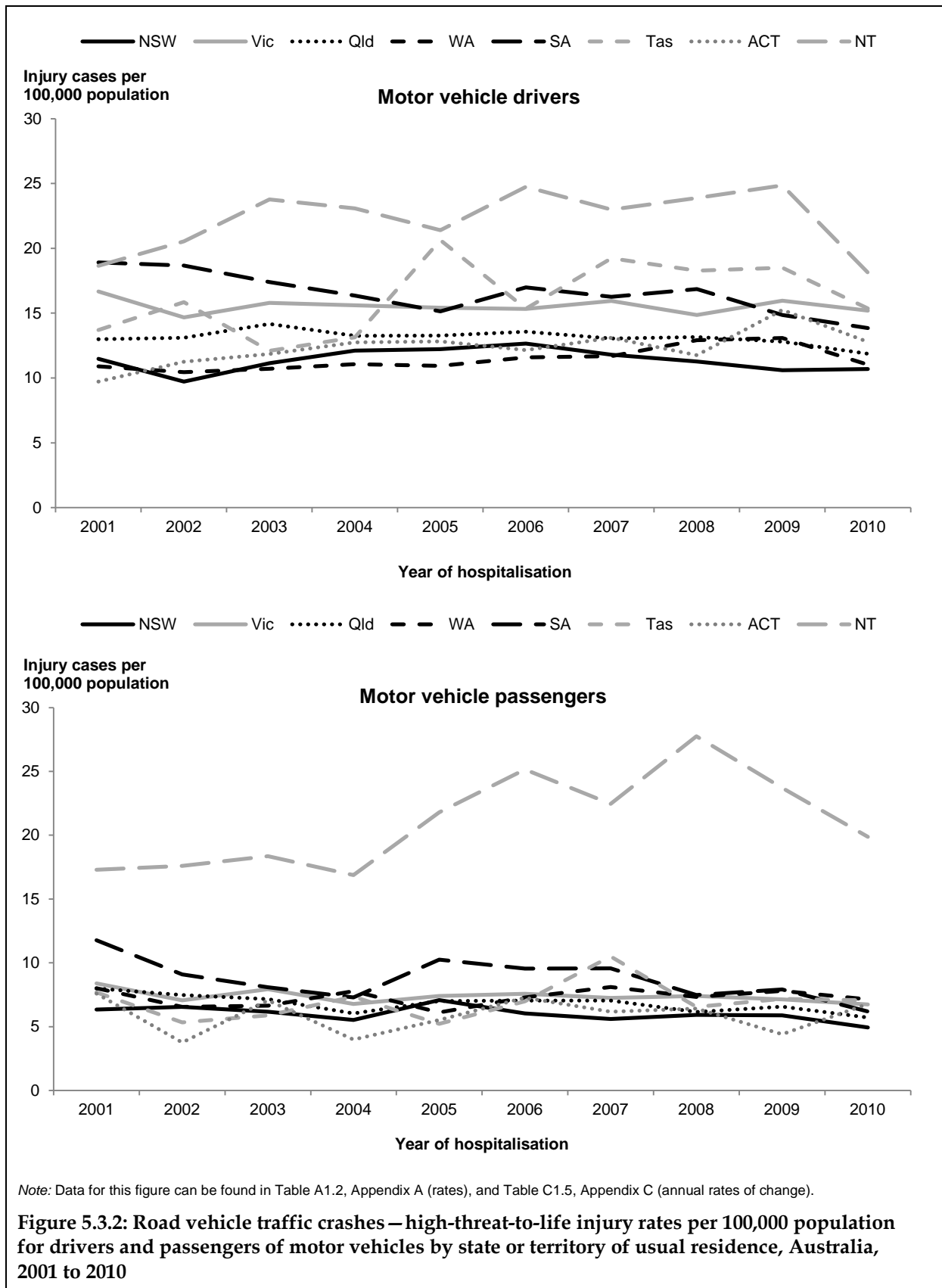
(continued)

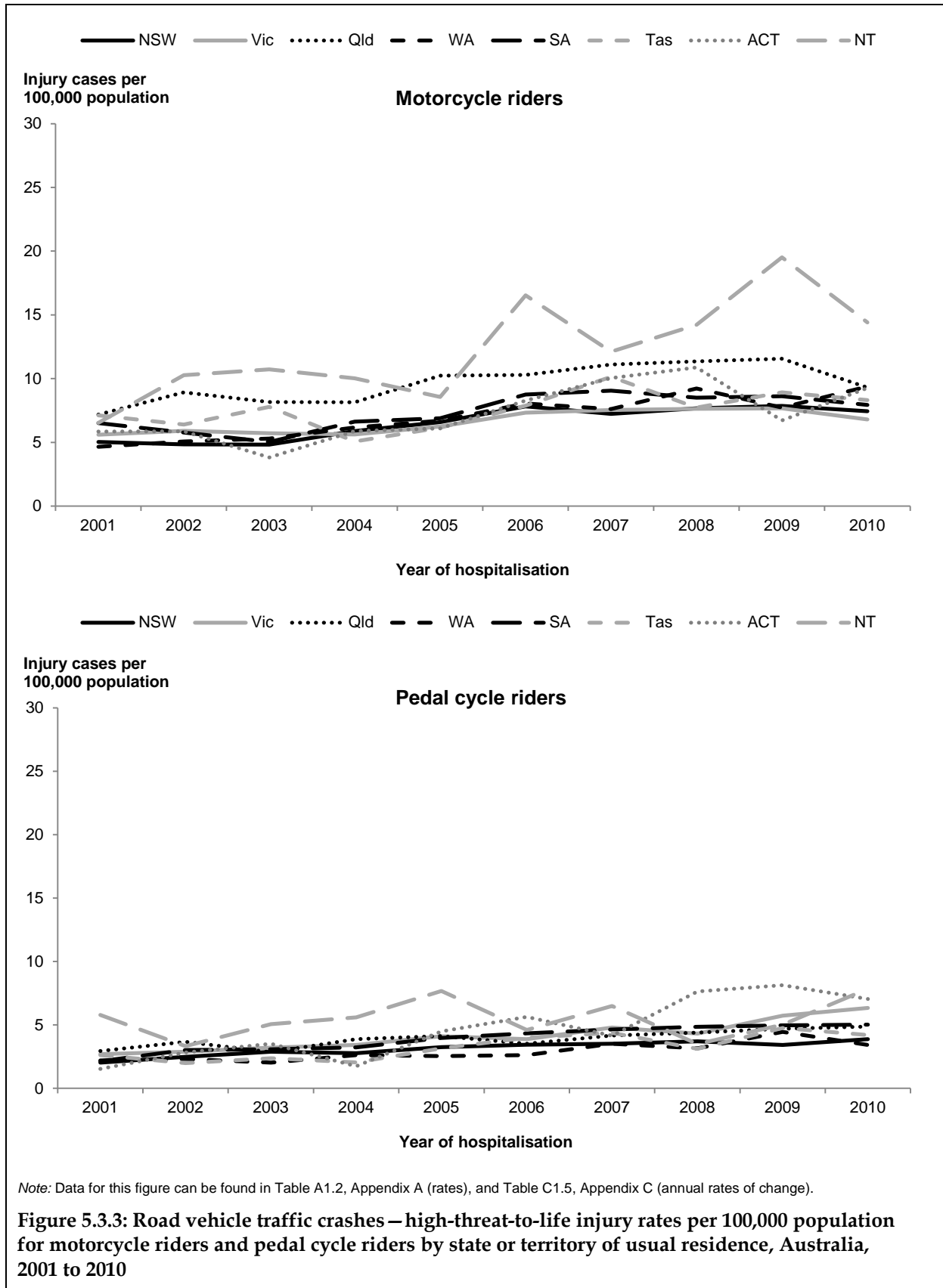
Table 5.3.2 (continued): Road vehicle traffic crashes – high-threat-to-life injury counts by state or territory of usual residence and case type, Australia, 2001 to 2010

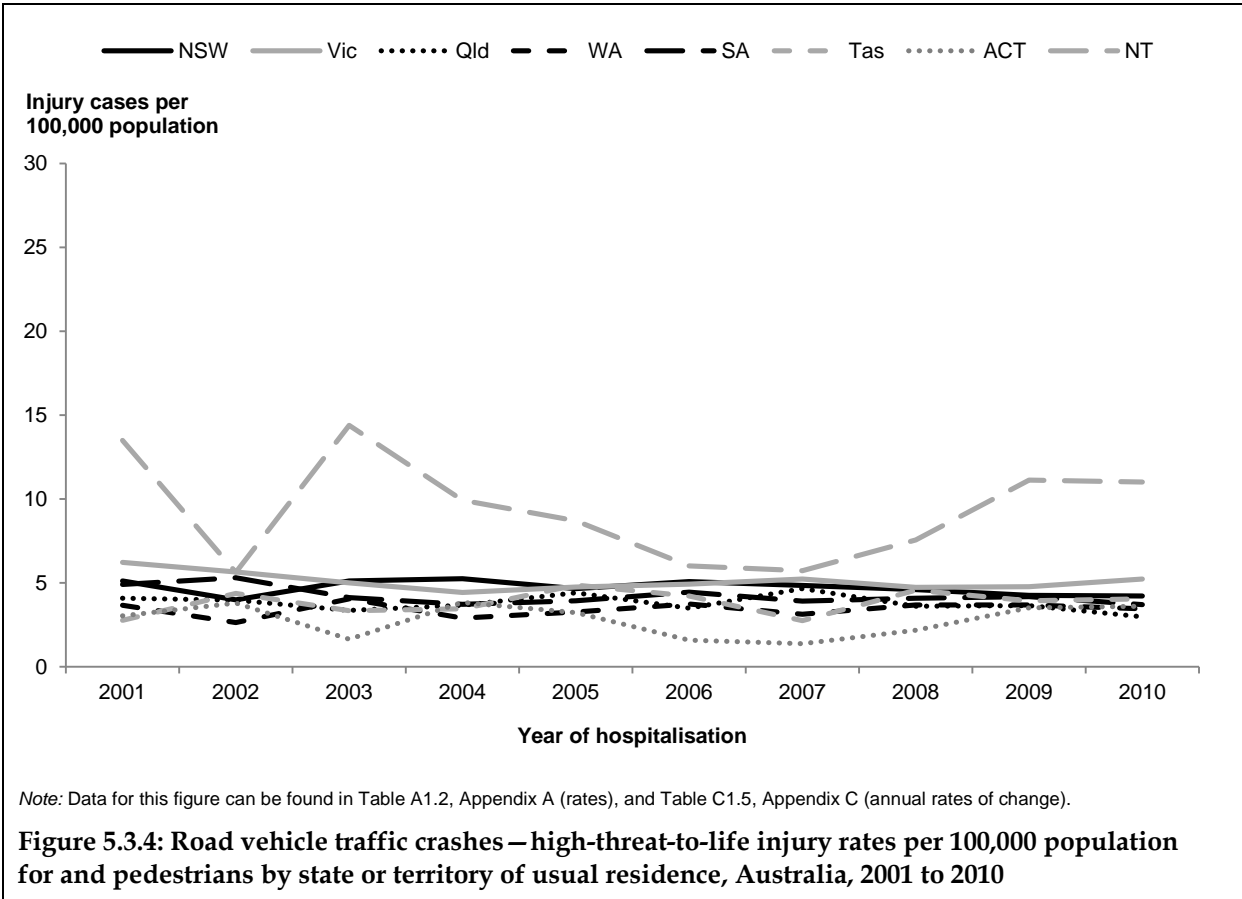
Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
SA										
Occupant of MV ^{(a)(b)}	484	450	408	373	411	435	420	407	382	349
<i>Driver</i>	285	284	265	247	239	272	259	273	245	233
<i>Passenger</i>	177	135	121	114	157	150	147	120	124	104
Motor cycle rider	96	86	75	98	103	135	139	133	140	130
Pedal cycle rider	32	46	47	49	62	69	73	79	82	86
Pedestrian	75	83	64	58	63	71	64	67	69	64
Other or unknown	n.p.	n.p.	5	n.p.	5	n.p.	8	6	7	n.p.
Tas										
Occupant of MV ^{(a)(b)}	117	107	89	108	125	114	149	121	135	110
<i>Driver</i>	63	73	56	63	97	75	94	88	94	74
<i>Passenger</i>	36	25	27	36	23	34	50	30	35	34
Motor cycle rider	33	29	35	23	28	36	48	37	42	39
Pedal cycle rider	12	9	11	10	14	19	22	15	25	21
Pedestrian	13	21	16	16	24	21	13	23	21	21
Other or unknown	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	6	n.p.	n.p.
ACT										
Occupant of MV ^{(a)(b)}	56	55	71	59	65	70	74	62	74	75
<i>Driver</i>	31	37	39	42	44	41	49	41	56	47
<i>Passenger</i>	22	13	23	13	19	25	22	20	16	25
Motor cycle rider	20	20	14	20	21	29	37	41	26	35
Pedal cycle rider	5	9	12	6	15	19	15	26	29	26
Pedestrian	9	11	4	11	11	6	5	8	12	13
Other or unknown	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
NT										
Occupant of MV ^{(a)(b)}	81	90	100	83	96	117	99	121	118	92
<i>Driver</i>	37	39	48	49	42	55	44	48	55	40
<i>Passenger</i>	39	40	41	32	50	57	48	67	57	49
Motor cycle rider	15	23	23	22	19	37	28	35	48	34
Pedal cycle rider	10	7	8	13	12	7	14	8	12	16
Pedestrian	27	13	23	20	19	13	13	18	26	27
Other or unknown	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.

(a) Occupants of motor vehicles except motorcyclists.

(b) Includes cases where injured person was an occupant of a motor vehicle but it was not stated whether the person was a driver or a passenger.







Rates based on number of registered vehicles

Table 5.3.3: Road vehicle traffic crashes – high-threat-to-life injury rates per 10,000 registered vehicles for occupants of motor vehicles and motorcycle riders by state or territory of usual residence, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW										
Occupant of MV	3.40	3.09	3.18	3.15	3.36	3.21	3.04	2.93	2.87	2.67
Motor cycle rider	35.7	33.0	31.4	36.4	38.2	42.2	36.2	35.3	33.6	30.3
Vic										
Occupant of MV	3.90	3.37	3.61	3.37	3.40	3.37	3.44	3.28	3.37	3.25
Motor cycle rider	28.0	28.3	28.2	27.0	28.8	32.1	31.1	29.4	28.1	24.1
Qld										
Occupant of MV	3.68	3.47	3.50	3.19	3.18	3.25	3.08	2.89	2.93	2.60
Motor cycle rider	34.6	41.4	36.5	34.6	40.3	36.6	36.0	34.4	33.9	27.0
WA										
Occupant of MV	2.88	2.57	2.54	2.74	2.51	2.68	2.76	2.73	2.85	2.45
Motor cycle rider	19.9	21.2	21.8	24.4	24.9	27.0	23.1	25.7	19.8	22.6
SA										
Occupant of MV	4.72	4.34	3.87	3.49	3.78	3.93	3.73	3.55	3.26	2.91
Motor cycle rider	34.2	30.3	26.1	33.0	32.8	39.1	37.0	32.6	31.0	27.6
Tas										
Occupant of MV	3.62	3.27	2.68	3.14	3.52	3.12	4.00	3.18	3.47	2.76
Motor cycle rider	38.7	33.1	40.2	25.2	28.8	33.8	41.9	29.4	30.8	26.8
ACT										
Occupant of MV	2.83	2.72	3.43	2.82	3.05	3.21	3.26	2.67	3.12	3.08
Motor cycle rider	30.7	29.3	19.9	27.9	27.8	34.9	39.4	39.2	22.5	28.9
NT										
Occupant of MV	8.14	8.95	9.86	8.00	8.94	10.54	8.62	10.14	9.47	7.10
Motor cycle rider	42.3	68.2	71.0	67.3	53.7	91.3	62.1	69.0	85.6	57.5
Australia										
Occupant of MV	3.76	3.41	3.46	3.30	3.39	3.37	3.31	3.15	3.20	2.90
Motor cycle rider	31.5	32.5	30.7	31.9	34.2	36.5	34.0	32.7	30.7	27.2

Notes

1. Data on number of motor vehicle registrations available from the Australian Bureau of Statistics (ABS cat. no. 9309.0).
2. Data on annual rates of change corresponding to this table can be found in Table C1.6, Appendix C.

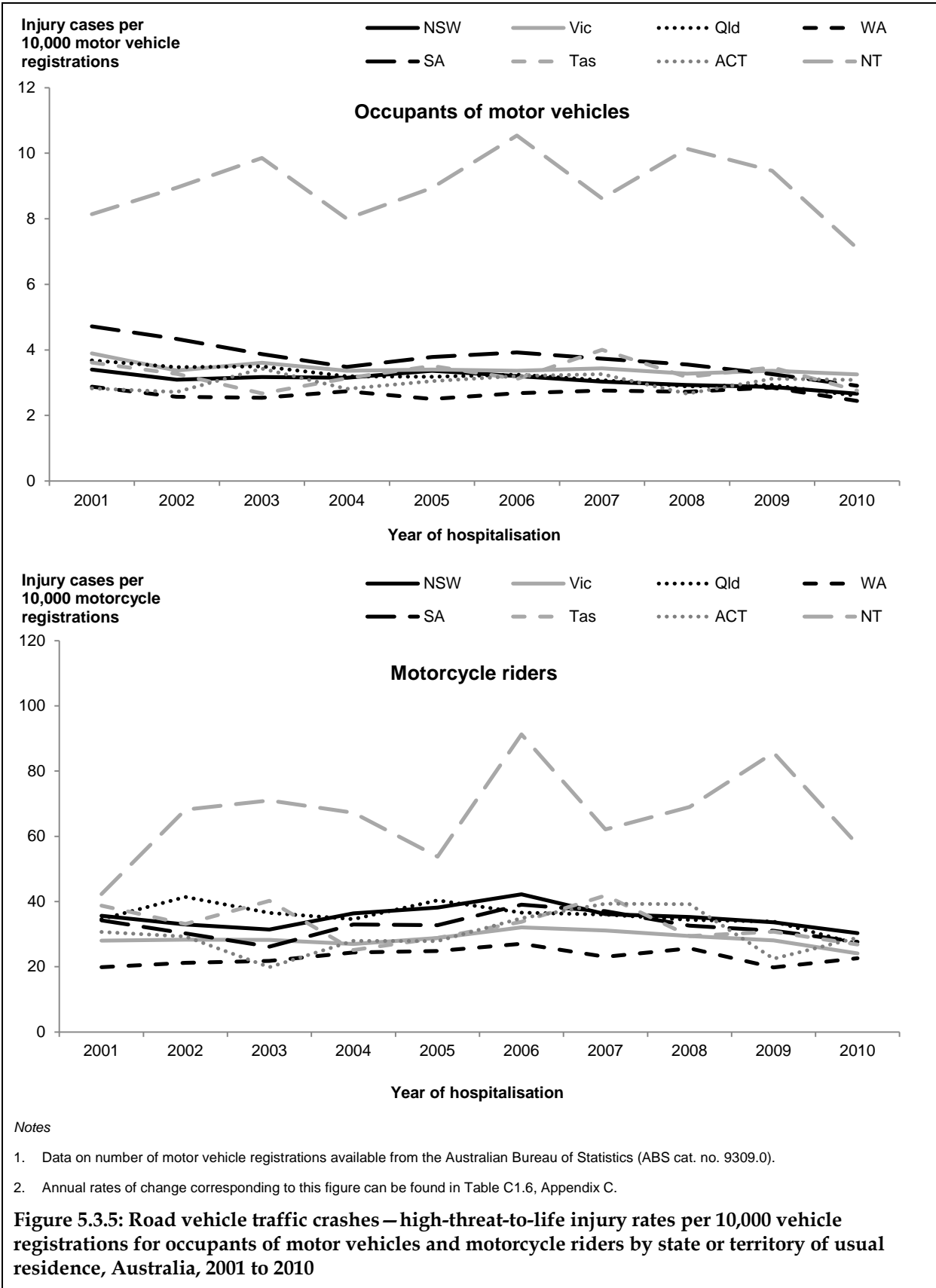


Table 5.3.4: Road vehicle traffic crashes – high-threat-to-life injury counts and rates per population and per vehicle registration for motorcycle riders, Australia, 2001 to 2010

Indicator	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Injury cases	1,122	1,211	1,172	1,285	1,479	1,737	1,787	1,905	1,943	1,814
Rate/100,000 population	5.8	6.2	5.9	6.4	7.3	8.4	8.5	8.9	8.8	8.1
Rate/1,000 registrations ^{(a) (b)}	3.2	3.3	3.1	3.2	3.4	3.7	3.4	3.3	3.1	2.7

(a) Data on number of motorcycle registrations available from the Australian Bureau of Statistics (ABS cat. no. 9309.0).

(b) Note that registration-based rates are per 1,000 in Table 5.3.4 and Figure 5.3.6, and per 10,000 elsewhere in this report.

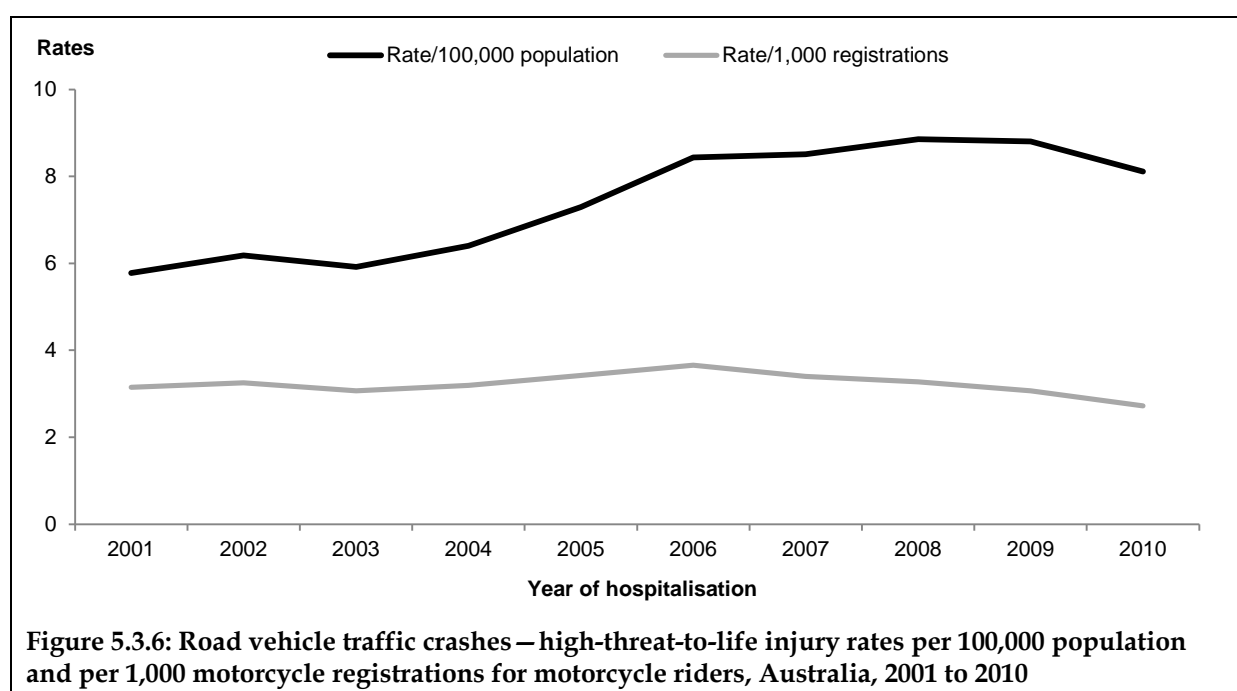


Figure 5.3.6: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population and per 1,000 motorcycle registrations for motorcycle riders, Australia, 2001 to 2010

Remoteness area of usual residence

Table 5.3.5: Road vehicle traffic crashes – high-threat-to-life injury counts by remoteness area of usual residence, Australia, 2001 to 2010

Remoteness area of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Major city	4,163	3,921	4,106	4,225	4,567	4,884	5,061	5,028	5,186	5,047
Inner regional	1,674	1,691	1,704	1,721	1,818	1,853	1,949	1,975	2,028	1,942
Outer regional	940	868	922	878	1,016	1,018	994	1,031	1,091	915
Remote	160	177	165	149	163	204	197	234	227	198
Very remote	128	154	131	129	139	134	128	127	155	153
Total^(a)	7,213	6,961	7,196	7,280	7,848	8,248	8,494	8,543	8,895	8,456

(a) Includes cases where remoteness of usual residence was not reported.

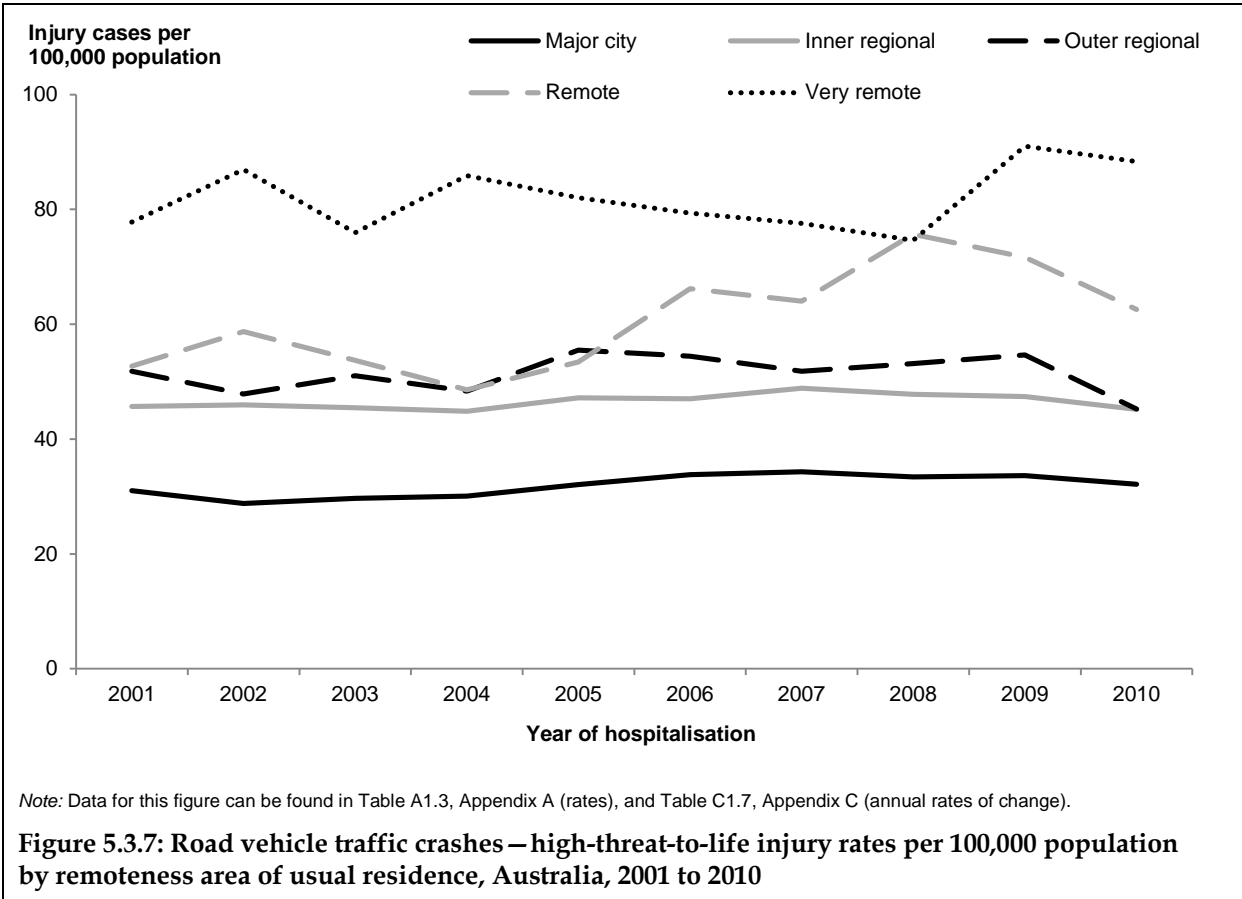


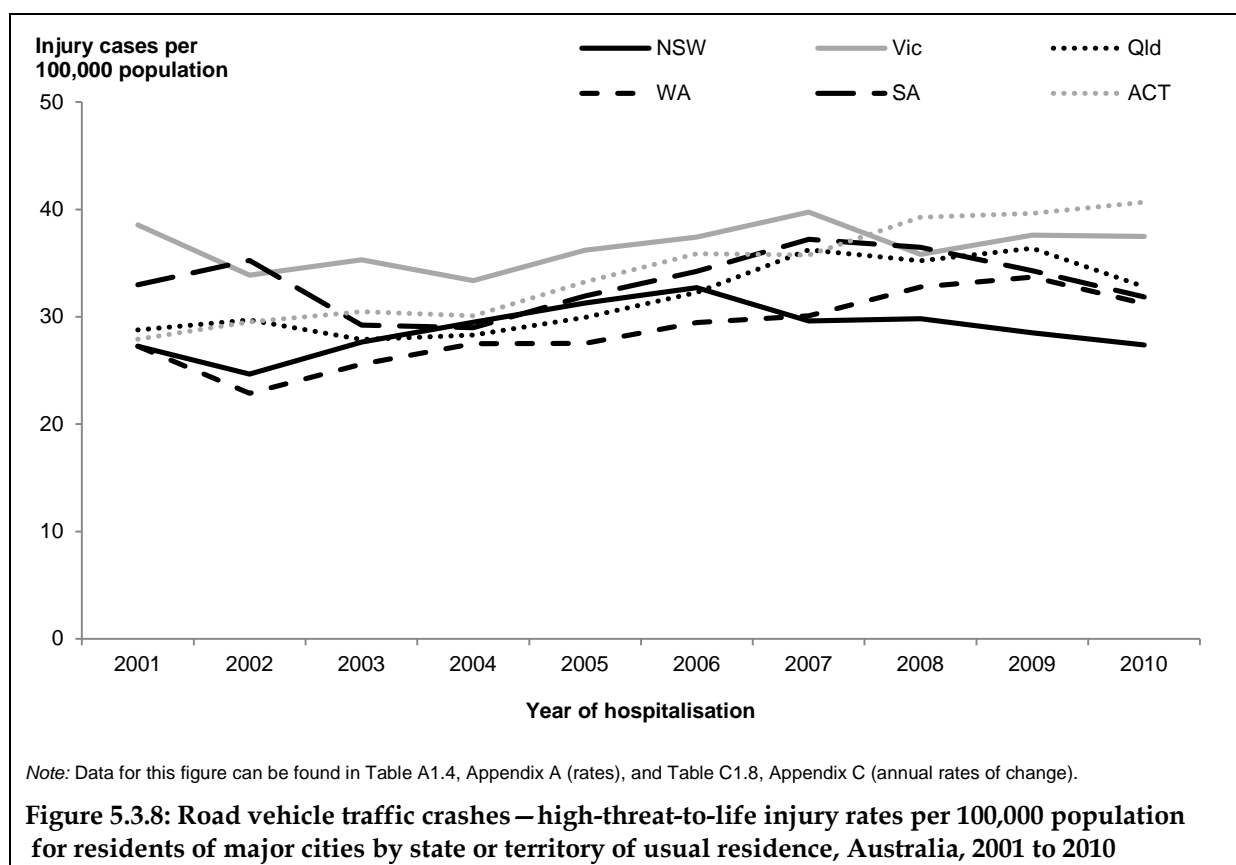
Table 5.3.6: Road vehicle traffic crashes – high-threat-to-life injury counts by state or territory of usual residence and remoteness area of usual residence, Australia, 2001 to 2010

Remoteness area of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW										
Major city	1,307	1,198	1,354	1,457	1,558	1,641	1,508	1,550	1,513	1,472
Inner regional	509	515	516	531	573	591	644	635	633	629
Outer regional	215	183	202	179	221	219	208	222	241	217
Remote	18	16	17	21	18	15	14	29	23	24
Very remote	n.p.	n.p.	n.p.	n.p.	n.p.	5	n.p.	n.p.	n.p.	n.p.
Vic										
Major city	1,402	1,248	1,321	1,274	1,399	1,474	1,597	1,469	1,583	1,617
Inner regional	450	480	493	463	463	481	514	572	597	597
Outer regional	113	102	107	107	119	108	104	118	146	127
Remote	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Qld										
Major city	625	661	643	669	727	802	924	917	982	892
Inner regional	398	416	440	451	477	428	447	406	454	377
Outer regional	281	281	278	263	359	359	317	329	300	260
Remote	38	40	43	32	34	31	44	76	51	49
Very remote	35	53	26	43	25	25	27	25	41	23
WA										
Major city	375	321	360	399	402	442	465	519	549	519
Inner regional	69	72	61	73	73	91	103	117	102	100
Outer regional	69	79	79	73	71	91	93	104	96	75
Remote	39	38	42	44	33	55	61	53	75	63
Very remote	34	35	37	42	50	39	33	30	38	62
SA										
Major city	366	397	329	328	367	402	436	436	414	397
Inner regional	160	128	105	120	126	150	114	122	113	108
Outer regional	119	94	123	106	107	101	102	91	118	98
Remote	31	42	26	24	36	50	27	22	16	18
Very remote	11	6	15	n.p.	8	10	25	21	19	10
Tas										
Inner regional	86	80	88	82	106	112	127	121	127	130
Outer regional	85	79	57	70	82	73	99	80	90	59
Remote	n.p.	n.p.	n.p.	n.p.	5	5	n.p.	n.p.	n.p.	n.p.
Very remote	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	5

(continued)

Table 5.3.6 (continued): Road vehicle traffic crashes – high-threat-to-life injury counts by state or territory of usual residence and remoteness area of usual residence, Australia, 2001 to 2010

Remoteness area of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ACT										
Major city	88	96	99	98	114	123	131	137	145	150
Inner regional	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
NT										
Outer regional	58	50	76	80	57	67	71	87	100	79
Remote	29	33	29	22	37	44	44	49	58	41
Very remote	45	53	48	39	54	53	36	48	50	50
Australia										
Major city	4,163	3,921	4,106	4,225	4,567	4,884	5,061	5,028	5,186	5,047
Inner regional	1,674	1,691	1,704	1,721	1,818	1,853	1,949	1,975	2,028	1,942
Outer regional	940	868	922	878	1,016	1,018	994	1,031	1,091	915
Remote	160	177	165	149	163	204	197	234	227	198
Very remote	128	154	131	129	139	134	128	127	155	153

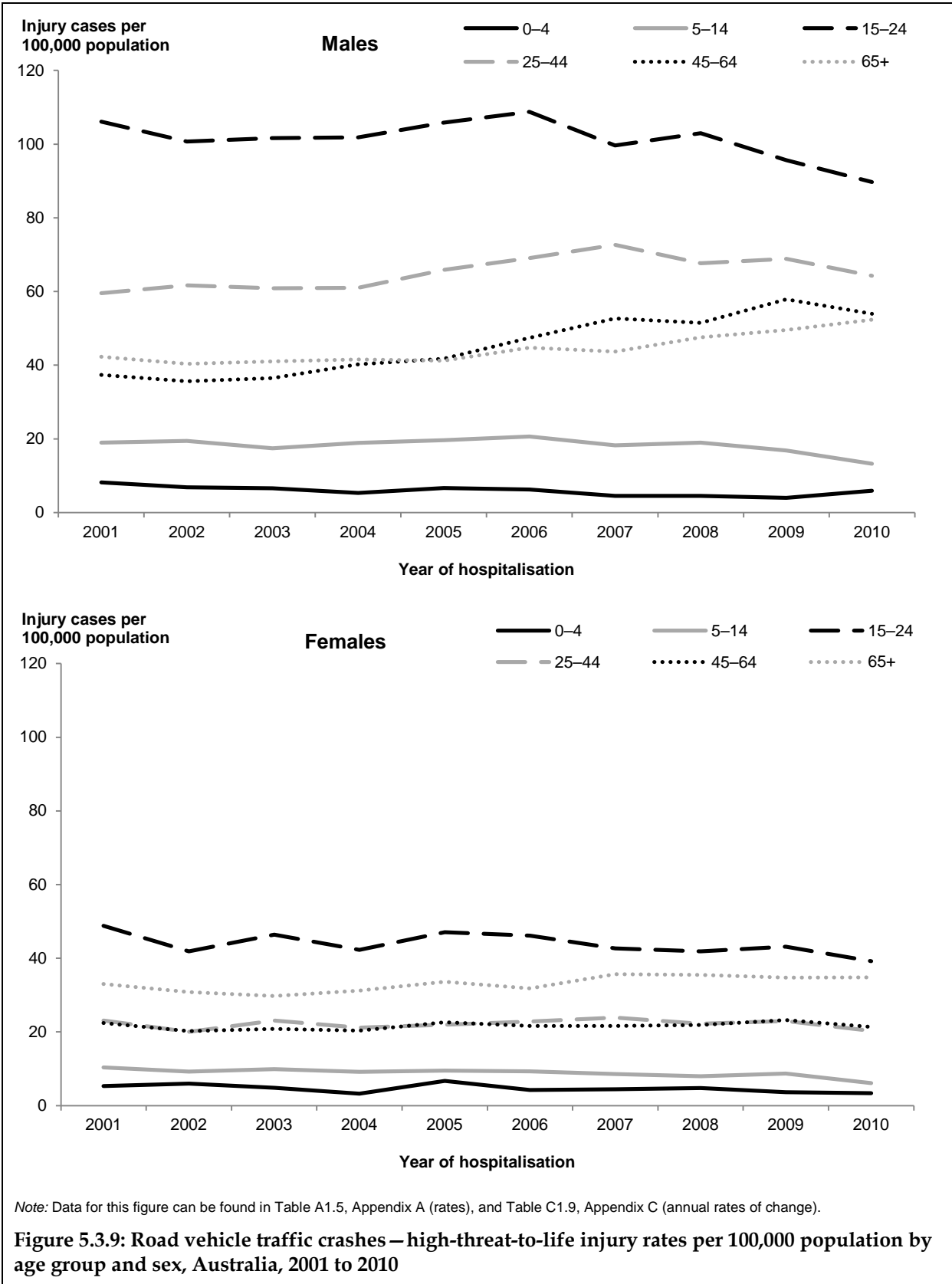


Age and sex

Table 5.3.7: Road vehicle traffic crashes – high-threat-to-life injury counts by age group and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0–4										
Males	54	45	43	35	44	42	31	32	29	44
Females	33	37	30	20	42	27	29	32	25	24
Persons	87	82	73	55	86	69	60	64	54	68
5–14										
Males	263	271	244	265	276	290	257	268	239	188
Females	137	122	131	122	127	124	115	107	117	82
Persons	400	393	376 ^(a)	387	403	414	372	375	356	270
15–24										
Males	1,434	1,383	1,420	1,446	1,531	1,604	1,510	1,607	1,536	1,453
Females	636	554	625	577	654	652	615	617	650	598
Persons	2,070	1,937	2,045	2,023	2,185	2,257 ^(a)	2,125	2,224	2,186	2,051
25–44										
Males	1,729	1,799	1,781	1,790	1,940	2,049	2,185	2,071	2,155	2,042
Females	680	590	682	627	651	681	721	682	718	644
Persons	2,409	2,389	2,463	2,417	2,591	2,730	2,906	2,753	2,873	2,686
45–64										
Males	842	824	865	977	1,039	1,209	1,374	1,375	1,575	1,491
Females	501	465	493	495	565	555	571	592	642	602
Persons	1,343	1,289	1,358	1,472	1,605 ^(a)	1,764	1,945	1,967	2,217	2,093
65+										
Males	455	445	463	480	488	543	546	611	658	720
Females	449	426	418	446	489	471	540	548	551	568
Persons	904	871	881	926	978 ^(a)	1,014	1,086	1,159	1,209	1,288
All ages										
Males	4,777	4,767	4,816	4,993	5,318	5,737	5,903	5,965	6,192	5,938
Females	2,436	2,194	2,379	2,287	2,528	2,510	2,591	2,578	2,703	2,518
Persons	7,213	6,961	7,196 ^(a)	7,280	7,848 ^(a)	8,248 ^(a)	8,494	8,543	8,895	8,456

(a) Number of persons is higher than the sum of males and females in some instances where sex of patient was not reported.

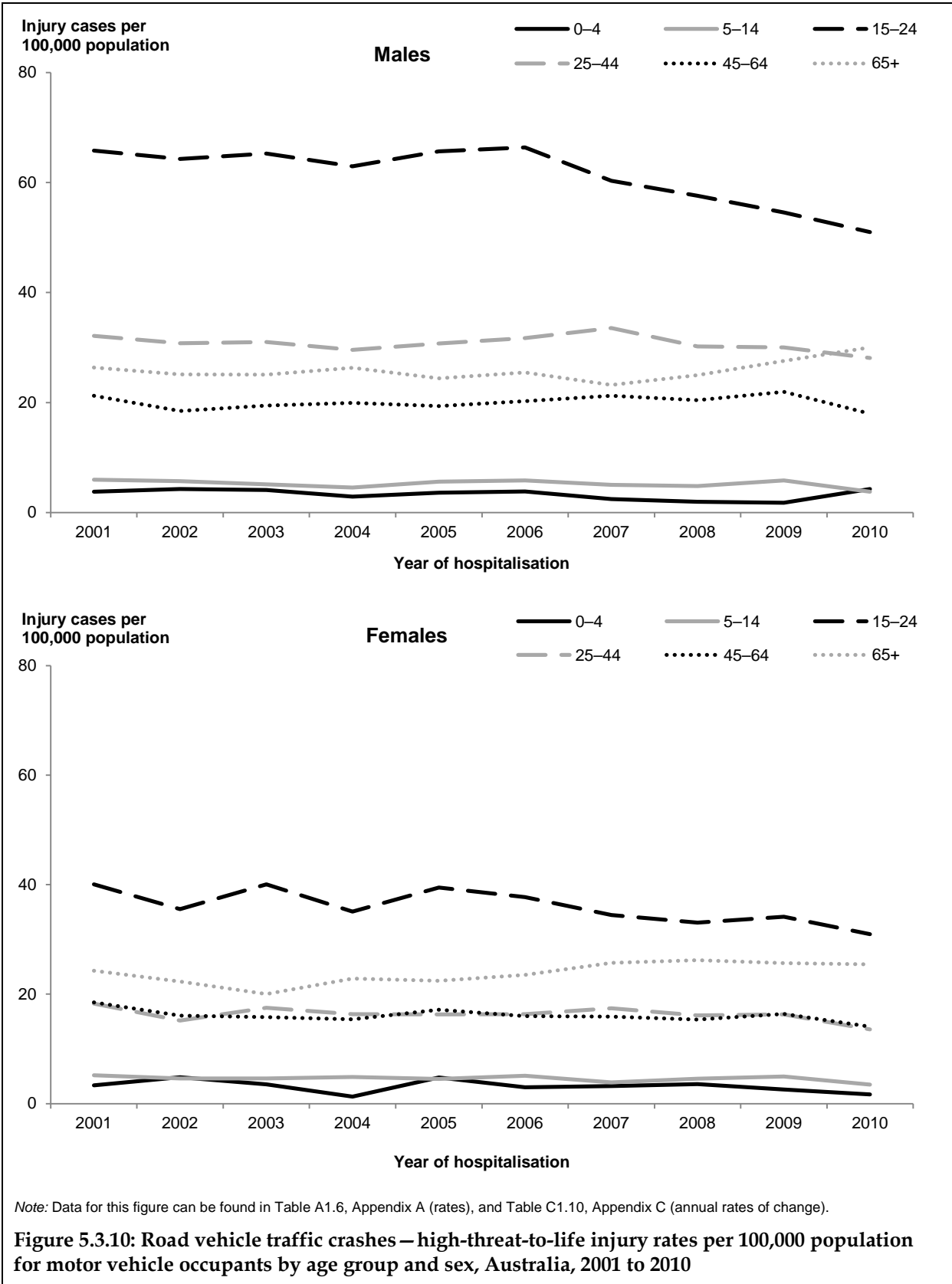


Motor vehicle occupants

Table 5.3.8: Road vehicle traffic crashes – high-threat-to-life injury counts for motor vehicle occupants by age group and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0–4										
Males	25	28	27	19	24	26	17	14	13	32
Females	21	30	22	8	30	19	21	24	18	12
Persons	46	58	49	27	54	45	38	38	31	44
5–14										
Males	83	80	72	64	79	82	71	68	83	54
Females	68	61	61	65	60	68	52	61	67	47
Persons	151	141	134 ^(a)	129	139	150	123	129	150	101
15–24										
Males	889	883	912	894	950	979	914	899	876	826
Females	522	470	539	479	548	533	496	487	514	472
Persons	1,411	1,353	1,451	1,373	1,498	1,512	1,410	1,386	1,390	1,298
25–44										
Males	933	898	907	868	906	941	1,009	925	939	893
Females	537	447	517	483	483	488	526	494	510	430
Persons	1,470	1,345	1,424	1,351	1,389	1,429	1,535	1,419	1,449	1,323
45–64										
Males	479	427	461	485	482	516	554	546	597	497
Females	413	369	374	374	429	410	419	415	453	396
Persons	892	796	835	859	912 ^(a)	926	973	961	1,050	893
65+										
Males	284	277	283	304	289	309	290	321	366	413
Females	330	308	281	326	326	348	389	405	407	415
Persons	614	585	564	630	616 ^(a)	657	679	726	773	828
All ages										
Males	2,693	2,593	2,662	2,634	2,730	2,853	2,855	2,774	2,874	2,715
Females	1,891	1,685	1,794	1,735	1,876	1,866	1,903	1,886	1,969	1,772
Persons	4,584	4,278	4,457 ^(a)	4,369	4,608 ^(a)	4,719	4,758	4,660	4,843	4,487

(a) Number of persons is higher than the sum of males and females in some instances where sex of patient was not reported.

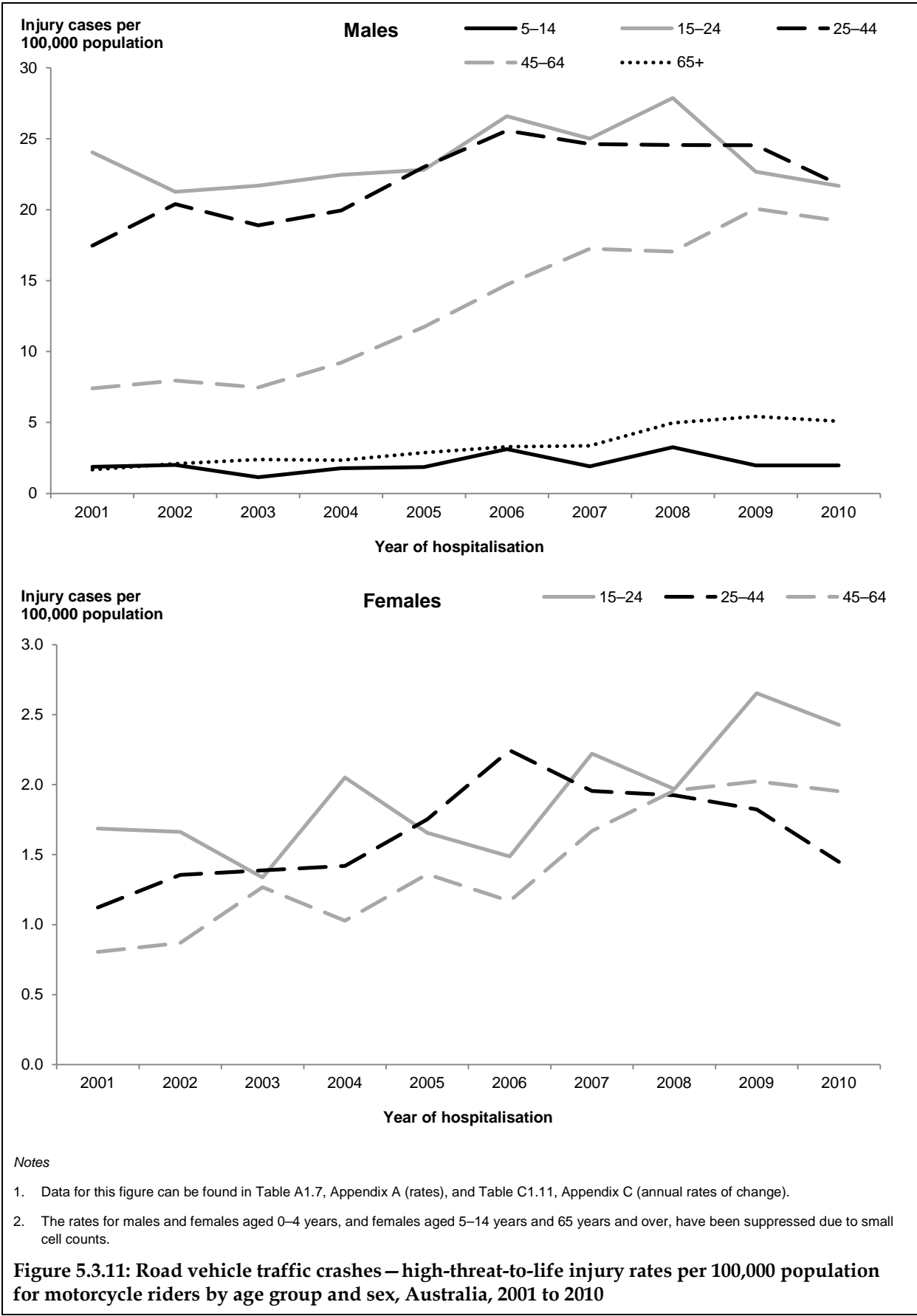


Motorcycle riders

Table 5.3.9: Road vehicle traffic crashes – high-threat-to-life injury counts for motorcycle riders by age group and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
5–14										
Males	26	28	16	25	26	44	27	46	28	28
Females	n.p.	n.p.	n.p.	5	n.p.	6	5	5	n.p.	n.p.
Persons	n.p.	n.p.	n.p.	30	n.p.	50	32	51	n.p.	n.p.
15–24										
Males	325	292	303	319	330	392	379	435	364	351
Females	22	22	18	28	23	21	32	29	40	37
Persons	347	314	321	347	353	414	411	464	404	388
25–44										
Males	507	595	553	585	678	759	740	752	768	692
Females	33	40	41	42	52	67	59	59	57	46
Persons	540	635	594	627	730	826	799	811	825	738
45–64										
Males	167	184	177	224	292	375	450	455	546	531
Females	18	20	30	25	34	30	44	53	56	55
Persons	185	204	207	249	326	405	494	508	602	586
65+										
Males	18	23	27	27	34	40	42	64	72	70
Females	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	7	7	9	n.p.
Persons	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	49	71	81	n.p.
All ages										
Males	1,043	1,123	1,077	1,181	1,361	1,612	1,640	1,752	1,778	1,672
Females	79	88	95	104	118	124	147	153	165	142
Persons	1,122	1,211	1,172	1,285	1,479	1,737	1,787	1,905	1,943	1,814

Note: Data for age group 0–4 not shown due to small case numbers, but included in 'All ages' totals.



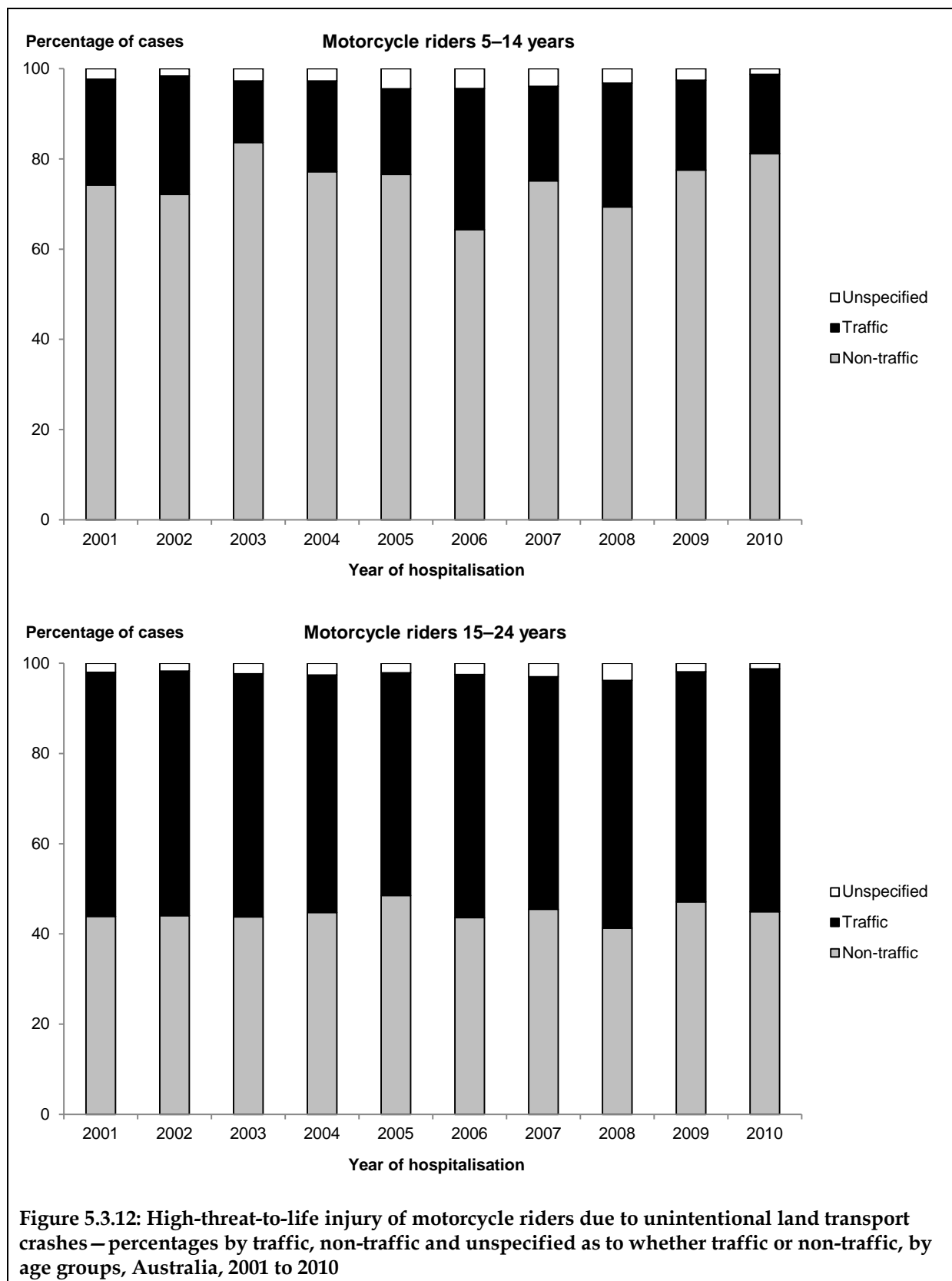
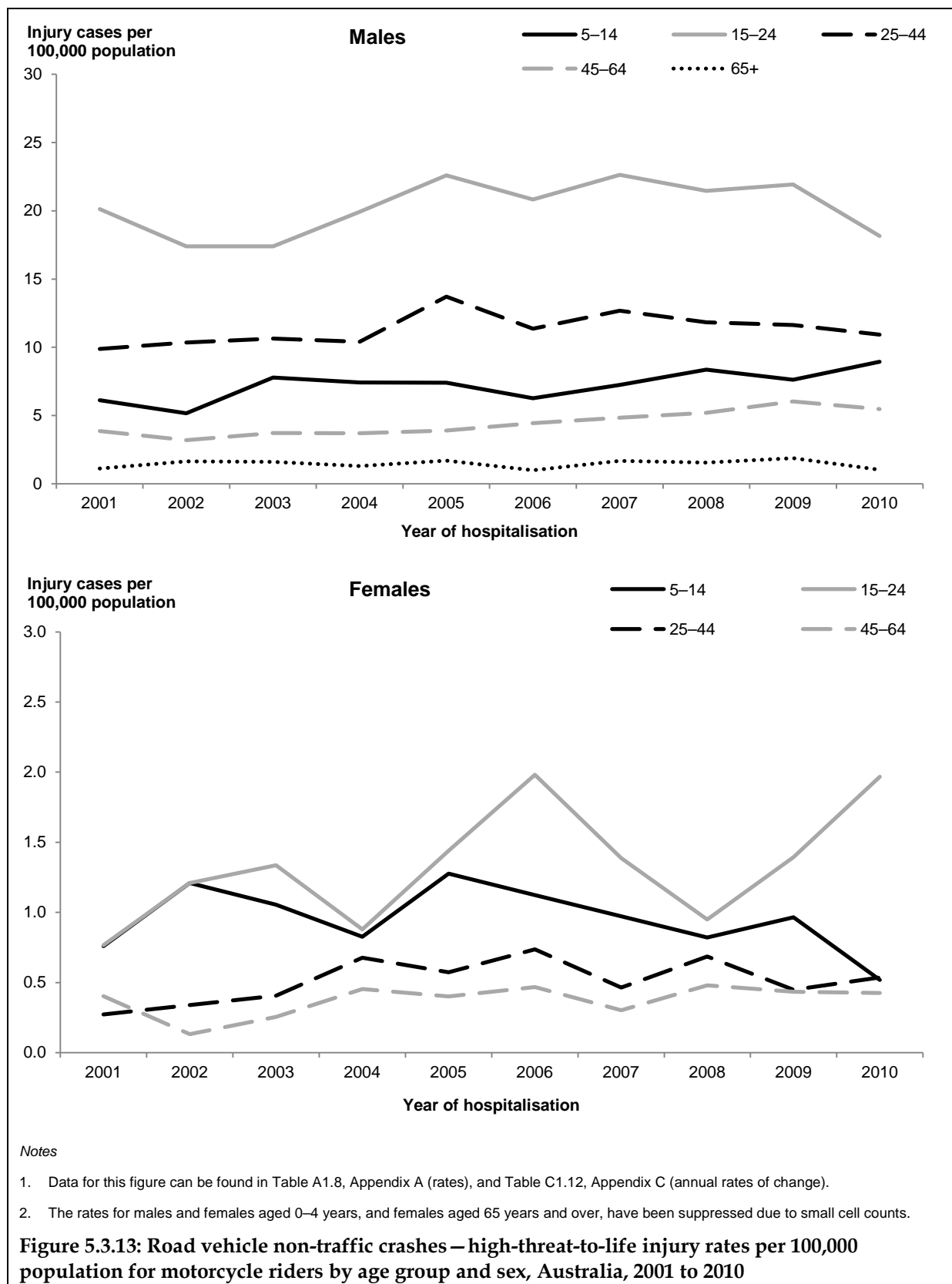


Table 5.3.10: Road vehicle non-traffic crashes – high-threat-to-life injury counts for motorcycle riders by age group and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
5–14										
Males	85	72	109	104	104	88	102	118	108	127
Females	10	16	14	11	17	15	13	11	13	7
Persons	95	88	123	115	121	103	115	129	121	134
15–24										
Males	272	239	243	283	327	307	343	335	352	294
Females	10	16	18	12	20	28	20	14	21	30
Persons	282	255	261	295	347	335	363	349	373	324
25–44										
Males	287	302	311	305	404	337	381	362	364	347
Females	8	10	12	20	17	22	14	21	14	17
Persons	295	312	323	325	421	359	395	383	378	364
45–64										
Males	87	74	88	90	97	113	126	139	164	151
Females	9	n.p.	6	11	10	12	8	13	12	12
Persons	96	n.p.	94	101	107	125	134	152	176	163
65+										
Males	12	18	18	15	20	12	21	20	25	14
Females	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	9	n.p.	n.p.	n.p.
Persons	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	30	n.p.	n.p.	n.p.
All ages										
Males	745	706	774	798	955	863	977	978	1,015	933
Females	40	47	53	57	69	81	65	63	63	70
Persons	785	753	827	855	1,024	944	1,042	1,041	1,078	1,003

Note: Data for age group 0–4 not shown due to small case numbers, but included in 'All ages' totals.

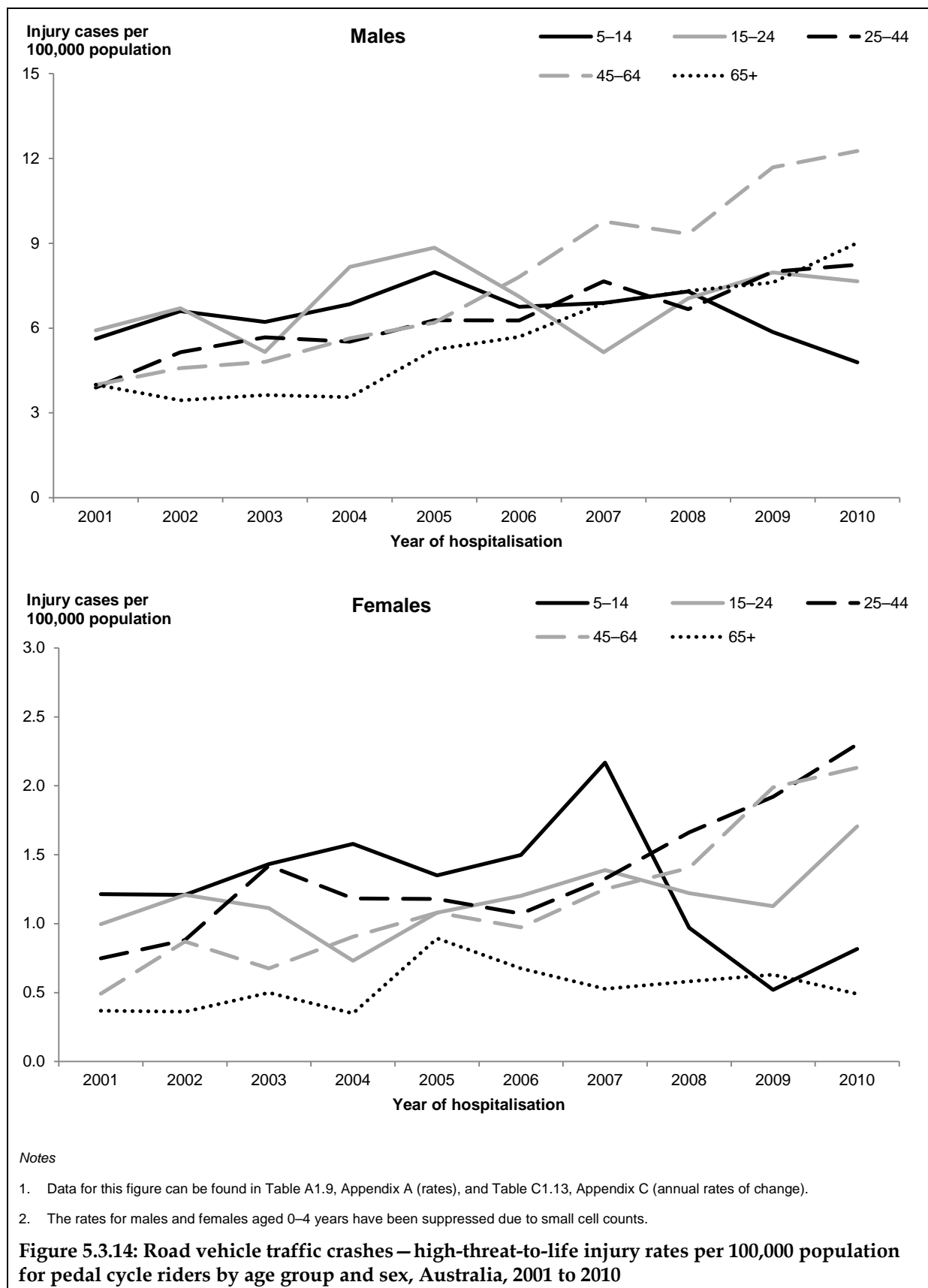


Pedal cycle riders

Table 5.3.11: Road vehicle traffic crashes – high-threat-to-life injury counts for pedal cycle riders by age group and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
5–14										
Males	78	92	87	96	112	95	97	103	83	68
Females	16	16	19	21	18	20	29	13	7	11
Persons	94	108	106	117	130	115	126	116	90	79
15–24										
Males	80	92	72	116	128	105	78	110	128	124
Females	13	16	15	10	15	17	20	18	17	26
Persons	93	108	87	126	143	122	98	128	145	150
25–44										
Males	113	150	166	162	185	186	230	204	250	262
Females	22	26	42	35	35	32	40	51	60	73
Persons	135	176	208	197	220	218	270	255	310	335
45–64										
Males	90	106	114	137	154	199	255	249	318	339
Females	11	20	16	22	27	25	33	38	55	60
Persons	101	126	130	159	181	224	288	287	373	399
65+										
Males	43	38	41	41	62	69	86	94	101	124
Females	5	5	7	5	13	10	8	9	10	8
Persons	48	43	48	46	75	79	94	103	111	132
All ages										
Males	408	479	485	553	646	656	749	760	882	919
Females	67	83	100	94	108	104	130	129	149	179
Persons	475	562	585	647	754	760	879	889	1,031	1,098

Note: Data for age group 0–4 not shown due to small case numbers, but included in 'All ages' totals.



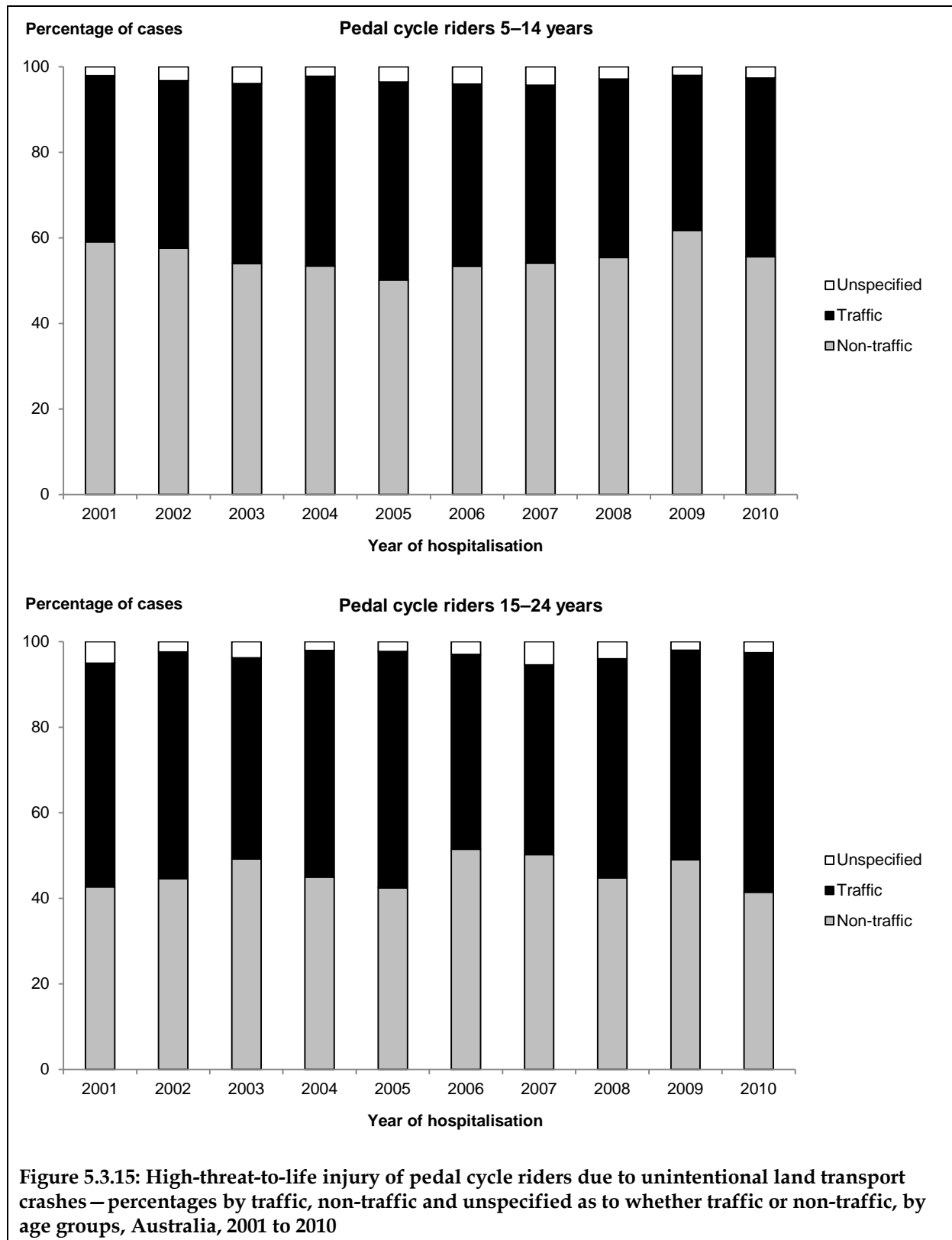
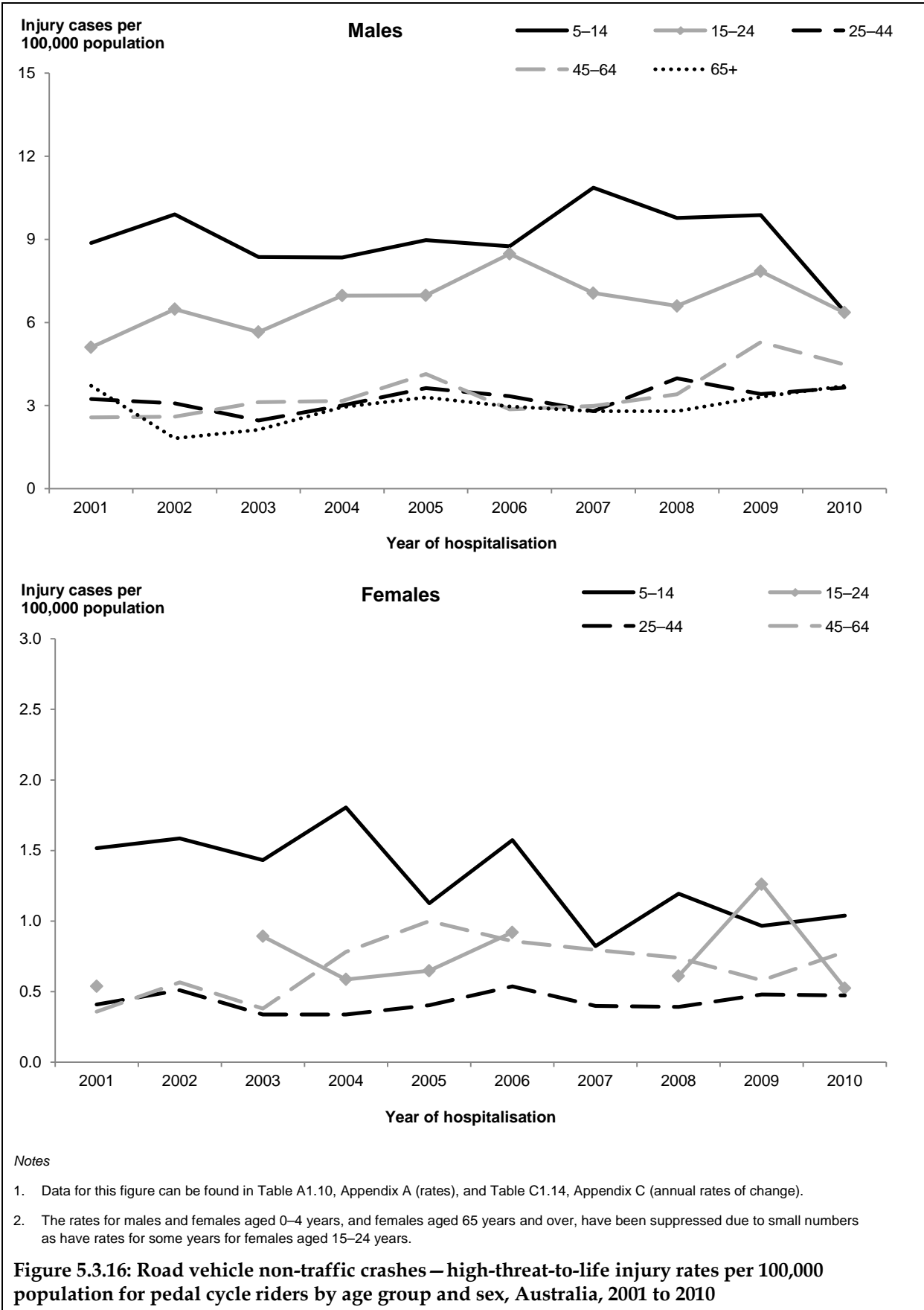


Table 5.3.12: Road vehicle non-traffic crashes – high-threat-to-life injury counts for pedal cycle riders by age group and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
5–14										
Males	123	138	117	117	126	123	153	138	140	91
Females	20	21	19	24	15	21	11	16	13	14
Persons	143	159	136	141	141	144	164	154	153	105
15–24										
Males	69	89	79	99	101	125	107	103	126	103
Females	7	n.p.	12	8	9	13	n.p.	9	19	8
Persons	76	n.p.	91	107	110	138	n.p.	112	145	111
25–44										
Males	94	90	72	88	107	99	84	122	107	116
Females	12	15	10	10	12	16	12	12	15	15
Persons	106	105	82	98	119	115	96	134	122	131
45–64										
Males	58	60	74	77	103	73	78	91	144	124
Females	8	13	9	19	25	22	21	20	16	22
Persons	66	73	83	96	128	95	99	111	160	146
65+										
Males	40	20	24	34	39	36	35	36	44	51
Females	5	n.p.	n.p.	n.p.	7	5	7	8	n.p.	14
Persons	45	n.p.	n.p.	n.p.	46	41	42	44	n.p.	65
All ages										
Males	388	401	372	420	478	461	462	494	566	486
Females	58	53	52	66	70	78	56	67	69	74
Persons	446	454	424	486	548	539	518	561	635	560

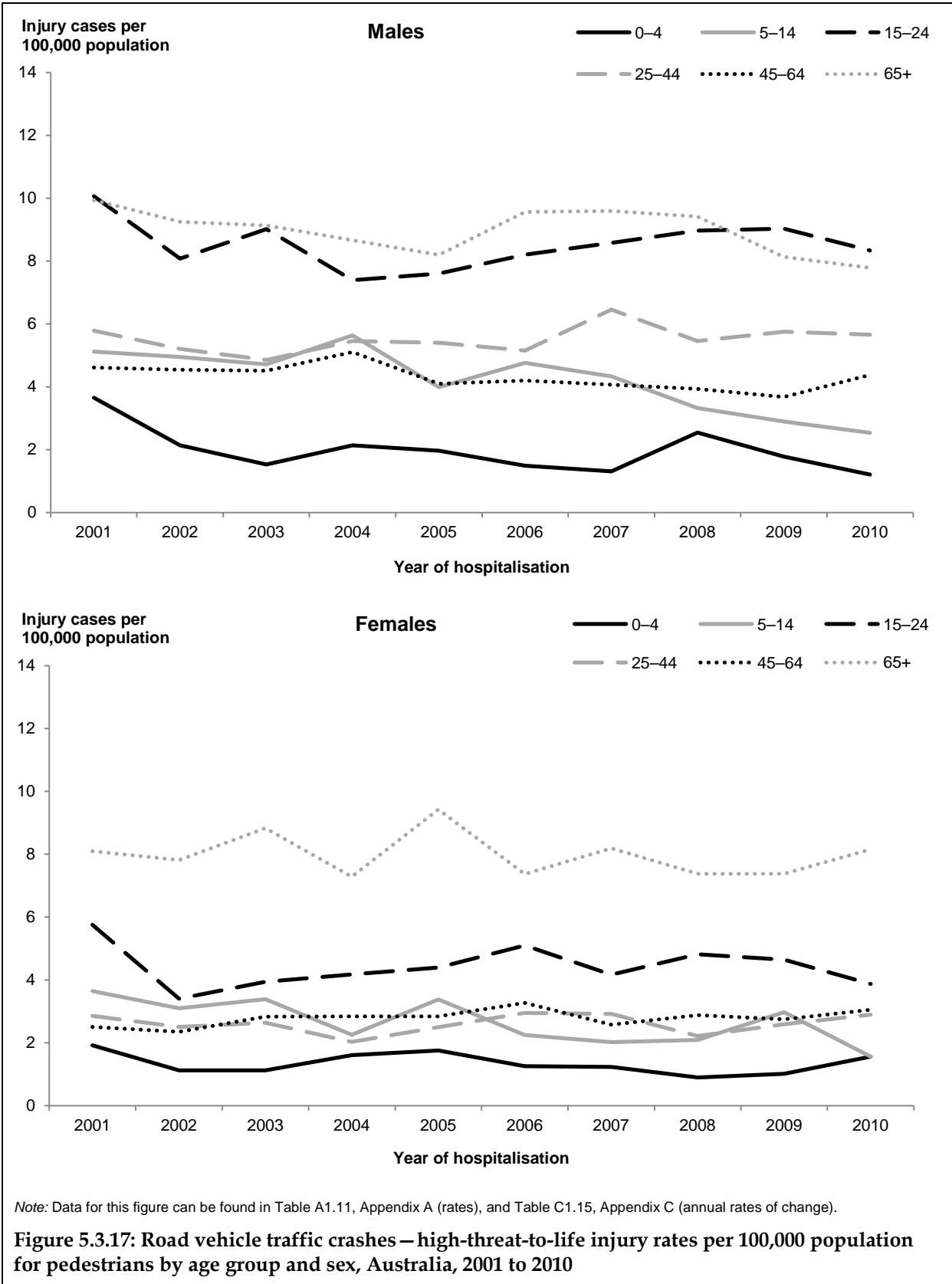
Note: Data for age group 0–4 not shown due to small case numbers, but included in 'All ages' totals.



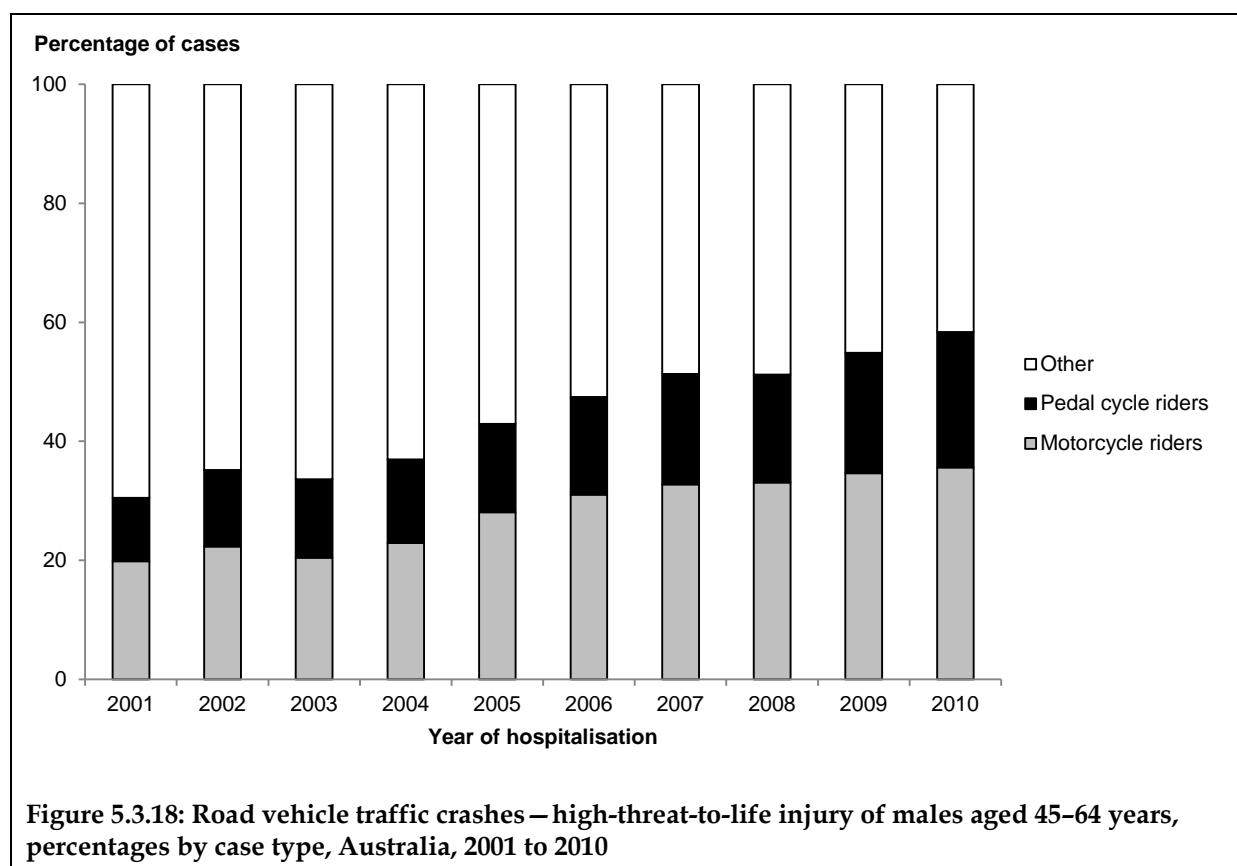
Pedestrians

Table 5.3.13: Road vehicle traffic crashes – high-threat-to-life injury counts for pedestrians by age group and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
0–4										
Males	24	14	10	14	13	10	9	18	13	9
Females	12	7	7	10	11	8	8	6	7	11
Persons	36	21	17	24	24	18	17	24	20	20
5–14										
Males	71	69	66	79	56	67	61	47	41	36
Females	48	41	45	30	45	30	27	28	40	21
Persons	119	110	111	109	101	97	88	75	81	57
15–24										
Males	136	111	126	105	110	121	130	140	145	135
Females	75	45	53	57	61	72	60	71	70	59
Persons	211	156	179	162	171	193	190	211	215	194
25–44										
Males	168	152	142	160	159	153	194	167	180	180
Females	84	74	78	60	74	88	88	68	81	92
Persons	252	226	220	220	233	241	282	235	261	272
45–64										
Males	104	105	107	124	102	107	106	105	100	121
Females	56	54	67	69	71	84	68	78	76	86
Persons	160	159	174	193	173	191	174	183	176	207
65+										
Males	107	102	103	100	97	116	120	121	108	107
Females	110	108	124	104	137	109	124	114	117	133
Persons	217	210	227	204	234	225	244	235	225	240
All ages										
Males	610	553	554	582	537	574	620	598	587	588
Females	385	329	374	330	399	391	375	365	391	402
Persons	995	882	928	912	936	965	995	963	978	990



Males aged 45–64 years



Heavy transport vehicles and buses

Table 5.3.14: Road vehicle traffic crashes – high-threat-to-life injury counts involving a heavy transport vehicle or bus by state or territory of usual residence, Australia, 2001 to 2010

State or territory of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW	143	140	137	155	149	168	162	171	162	167
Vic	116	125	117	114	123	125	114	125	158	155
Qld	75	88	87	96	105	105	101	112	113	112
WA	44	28	30	26	40	38	51	54	45	52
SA	56	39	38	25	40	48	40	40	37	42
Tas	9	5	14	11	13	18	12	11	14	7
ACT	7	n.p.	n.p.	n.p.	5	5	7	6	5	6
NT	6	n.p.	n.p.	n.p.	7	6	9	9	6	9
Total^(a)	463	442	439	447	499	525	503	534	558	561

(a) Includes cases where state or territory of usual residence is not specified.

Table 5.3.15: Road vehicle traffic crashes – high-threat-to-life injury counts for occupants of heavy transport vehicles (excluding buses) by counterpart, Australia, 2001 to 2010

Counterpart ^(a)	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Car, pick-up truck or van	13	10	10	10	8	14	16	22	15	13
Heavy transport vehicle	18	20	10	23	28	27	28	28	34	25
Pedestrian or animal	0	0	n.p.	0	n.p.	0	n.p.	n.p.	n.p.	0
Train	5	0	n.p.	0	0	n.p.	n.p.	n.p.	0	0
Fixed or stationary object	14	24	26	21	14	23	13	17	13	22
Non-collision transport accident ^(b)	56	57	62	61	69	74	77	71	86	85
Other and unspecified accidents	15	n.p.	n.p.	7	n.p.	n.p.	9	9	n.p.	0
Total	121	115	116	122	130	147	150	149	156	145

(a) *Counterpart* refers to the vehicle or object with which the injured person's vehicle collided.

(b) Non-collision transport accidents include overturning, falling or being thrown from a motor vehicle.

Table 5.3.16: Road vehicle traffic crashes – high-threat-to-life injury counts for bus occupants by counterpart, Australia, 2001 to 2010

Counterpart ^(a)	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Car, pick-up truck or van	n.p.	n.p.	6	6	17	20	5	5	8	5
Heavy transport vehicle	n.p.	n.p.	n.p.	n.p.	6	n.p.	n.p.	5	11	8
Pedestrian or animal	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	5	n.p.	n.p.	n.p.
Fixed or stationary object	n.p.	14	n.p.	n.p.	n.p.	7	n.p.	n.p.	5	n.p.
Non-collision transport accident ^(a)	15	10	12	14	23	24	31	29	20	41
Other and unspecified accidents	10	6	n.p.	n.p.	6	n.p.	8	6	n.p.	7
Total	34	35	28	29	53	57	54	49	48	63

(a) *Counterpart* refers to the vehicle or object with which the injured person's vehicle collided.

(b) Non-collision transport accidents include overturning, falling or being thrown from a motor vehicle.

Table 5.3.17: High-threat-to-life injury counts for persons (other than occupants of a heavy transport vehicle or bus) injured in a collision with a heavy transport vehicle or bus, by injured person's mode of transport, Australia, 2001 to 2010

Injured person's mode of transport	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Car	216	189	202	198	193	200	200	207	223	218
Motorcycle	24	41	35	28	33	46	28	40	31	44
Pedal cycle	15	18	11	16	28	13	22	30	32	32
Pedestrian	45	35	39	45	52	47	42	51	56	50
Pick-up truck or van	8	8	8	9	10	13	7	8	12	9
Total^(a)	308	292	295	296	316	321	299	336	354	353

(a) Total includes counts for three-wheeled motor vehicles.

5.4 Trends in high-threat-to-life injury due to road vehicle non-traffic crashes, 2001 to 2010

Table 5.4.1: Road vehicle non-traffic crashes – high-threat-to-life injury counts by case type, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Occupant of MV ^{(a)(b)}	895	772	673	719	779	606	626	690	692	613
Driver	493	394	363	426	413	331	383	410	459	397
Passenger	298	275	228	213	277	200	177	225	200	182
Motor cycle rider	785	753	827	855	1,024	944	1,042	1,041	1,078	1,003
Pedal cycle rider	446	454	424	486	548	539	518	561	635	560
Pedestrian	177	180	162	183	213	148	154	166	177	217
Other or unknown	17	22	22	8	14	22	15	14	26	19
Total	2,320	2,181	2,108	2,251	2,578	2,259	2,355	2,472	2,608	2,412

(a) Occupants of motor vehicles except motorcycles.

(b) Includes cases where injured person was an occupant of a motor vehicle but it was not stated whether the person was a driver or a passenger.

Table 5.4.2: Road vehicle non-traffic crashes – high-threat-to-life injury counts by state or territory of usual residence and case type, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW										
Occupant of MV ^{(a)(b)}	209	213	205	226	236	172	184	196	233	175
<i>Driver</i>	98	107	94	133	132	105	103	122	159	112
<i>Passenger</i>	84	77	72	68	80	47	55	57	64	53
Motor cycle rider	240	210	242	284	340	278	308	319	312	325
Pedal cycle rider	113	132	109	149	162	158	136	174	180	163
Pedestrian	48	43	52	58	71	49	59	58	55	54
Other or unknown	n.p.	5	10	n.p.	6	8	5	n.p.	10	5
Vic										
Occupant of MV ^{(a)(b)}	216	170	130	121	157	135	137	126	105	98
<i>Driver</i>	132	88	83	69	75	74	84	72	57	58
<i>Passenger</i>	56	60	31	42	61	47	40	45	40	35
Motor cycle rider	173	166	182	156	205	210	219	215	252	212
Pedal cycle rider	123	114	100	127	136	142	161	144	138	152
Pedestrian	44	40	35	42	44	42	36	42	42	55
Other or unknown	n.p.	n.p.	6	n.p.	n.p.	n.p.	5	n.p.	7	5
Qld										
Occupant of MV ^{(a)(b)}	246	189	170	191	175	133	153	165	170	158
<i>Driver</i>	137	95	100	107	92	64	96	86	115	108
<i>Passenger</i>	80	62	56	57	61	45	41	69	48	43
Motor cycle rider	181	186	216	215	233	238	274	252	244	249
Pedal cycle rider	101	96	105	101	108	116	115	119	166	114
Pedestrian	45	47	36	31	37	25	21	35	38	53
Other or unknown	7	8	n.p.	n.p.	n.p.	9	n.p.	n.p.	6	5
WA										
Occupant of MV ^{(a)(b)}	89	81	65	54	78	65	65	84	78	94
<i>Driver</i>	53	41	27	36	48	39	39	54	61	67
<i>Passenger</i>	27	36	31	13	21	19	20	22	15	24
Motor cycle rider	98	82	84	75	100	91	98	123	111	87
Pedal cycle rider	54	41	48	47	69	38	35	39	56	49
Pedestrian	16	25	21	15	21	10	16	10	11	26
Other or unknown	n.p.	n.p.	n.p.	0	n.p.	0	n.p.	n.p.	n.p.	n.p.

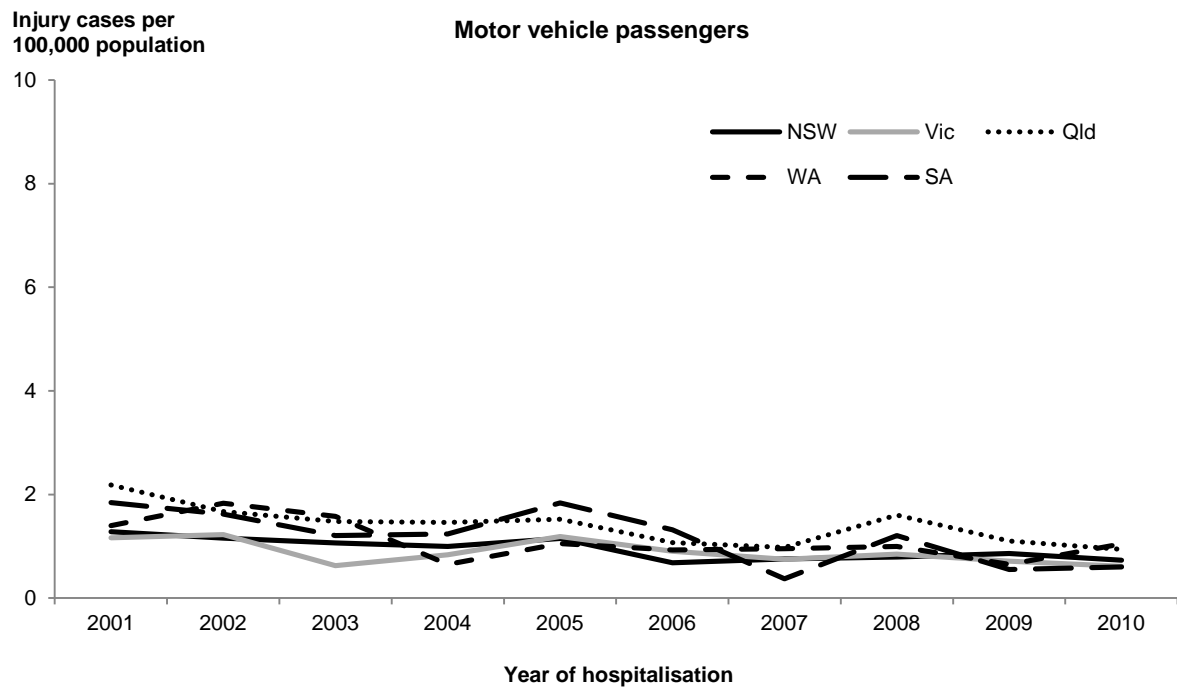
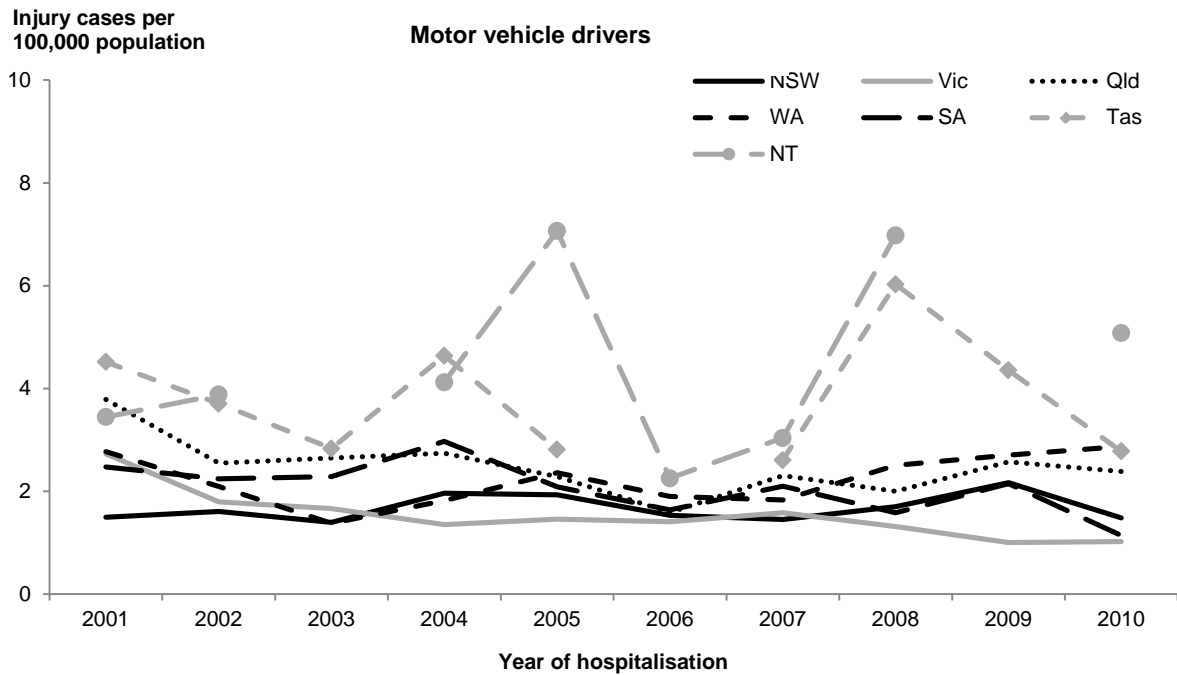
(continued)

Table 5.4.2 (continued): Road vehicle non-traffic crashes – high-threat-to-life injury counts by state or territory of usual residence and case type, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
SA										
Occupant of MV ^{(a)(b)}	68	71	55	70	69	54	45	51	47	32
<i>Driver</i>	37	34	35	46	33	26	34	26	36	18
<i>Passenger</i>	28	24	19	19	29	21	7	20	9	10
Motor cycle rider	53	61	60	81	82	79	84	70	96	74
Pedal cycle rider	24	48	41	29	38	46	37	43	49	31
Pedestrian	17	17	9	25	22	15	10	14	15	9
Other or unknown	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Tas										
Occupant of MV ^{(a)(b)}	30	25	22	27	19	14	19	33	29	21
<i>Driver</i>	21	17	13	22	13	n.p.	13	28	21	15
<i>Passenger</i>	6	5	6	5	n.p.	8	5	n.p.	7	6
Motor cycle rider	15	16	15	21	21	20	24	36	25	19
Pedal cycle rider	14	9	5	17	8	22	9	12	5	16
Pedestrian	5	n.p.	n.p.	5	7	n.p.	5	5	n.p.	9
Other or unknown	0	0	0	0	0	1	0	0	0	0
ACT										
Occupant of MV ^{(a)(b)}	7	7	7	10	n.p.	9	n.p.	5	n.p.	n.p.
<i>Driver</i>	n.p.	n.p.	5	5	n.p.	7	n.p.	n.p.	n.p.	n.p.
<i>Passenger</i>	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Motor cycle rider	11	13	13	14	11	n.p.	8	12	12	13
Pedal cycle rider	11	7	11	7	16	5	16	23	28	22
Pedestrian	0	n.p.	n.p.	n.p.	5	n.p.	n.p.	n.p.	5	n.p.
Other or unknown	0	0	0	0	0	0	0	0	0	0
NT										
Occupant of MV ^{(a)(b)}	13	15	9	12	21	8	13	20	12	20
<i>Driver</i>	7	9	n.p.	5	13	5	7	17	n.p.	13
<i>Passenger</i>	5	6	5	5	7	n.p.	6	n.p.	7	5
Motor cycle rider	7	13	11	8	20	18	20	8	20	19
Pedal cycle rider	n.p.	n.p.	n.p.	7	n.p.	n.p.	7	5	n.p.	5
Pedestrian	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	0	7	5
Other or unknown	n.p.	n.p.	0	n.p.	0	n.p.	0	0	n.p.	0

(a) Occupants of motor vehicles except motorcycles.

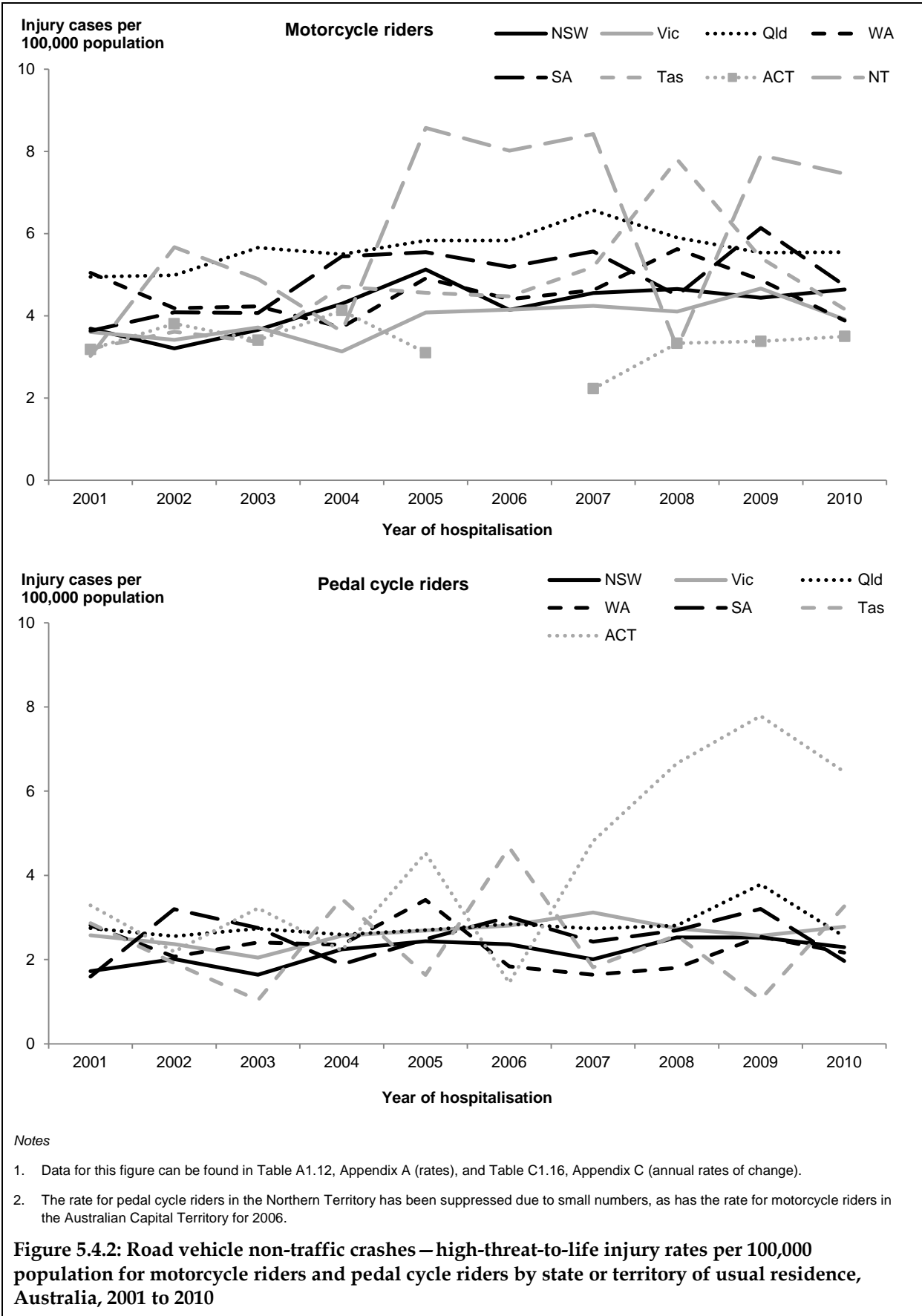
(b) Includes cases where injured person was an occupant of a motor vehicle but it was not stated whether the person was a driver or a passenger.

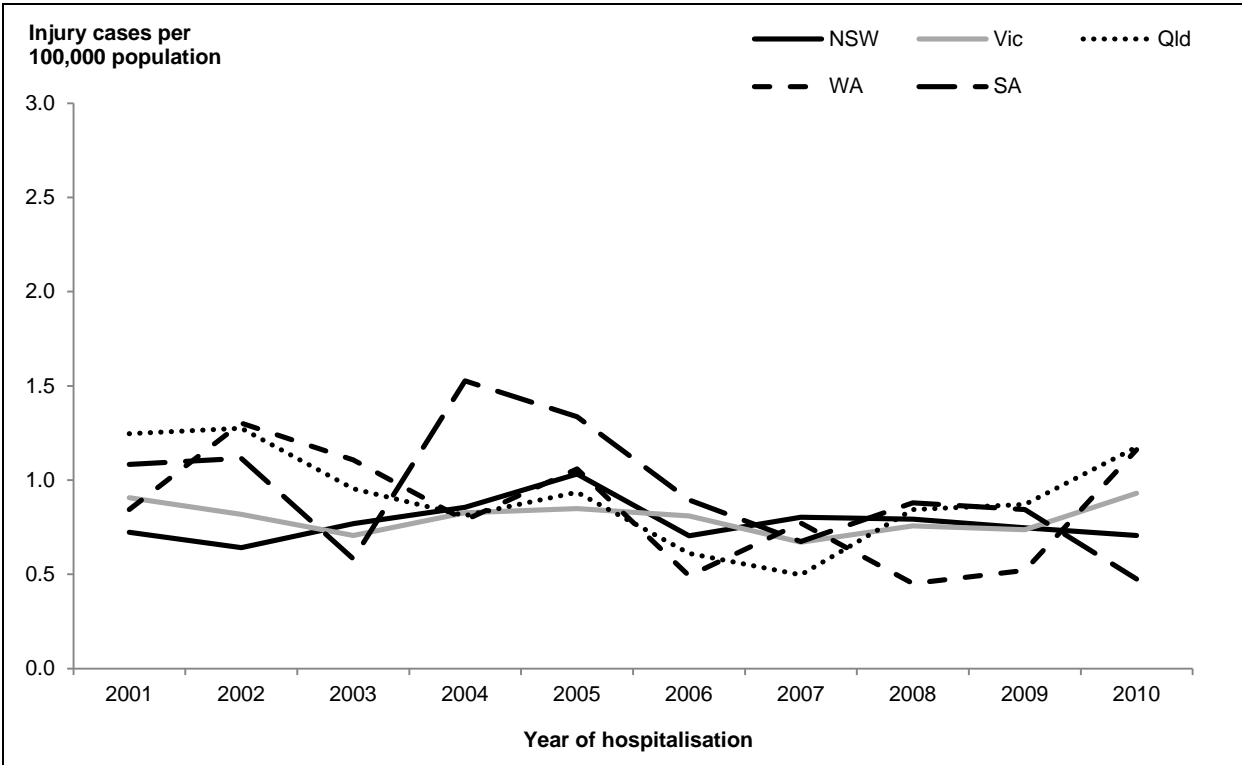


Notes

1. Data for this figure can be found in Table A1.12, Appendix A (rates), and Table C1.16, Appendix C (annual rates of change).
2. The rates for motor vehicle drivers in the Australian Capital Territory have been suppressed due to small numbers, as have rates for motor vehicle drivers in Tasmania and the Northern Territory for some years. The rates for motor vehicle passengers in Tasmania, the Australian Capital Territory and the Northern Territory have also been suppressed due to small numbers.

Figure 5.4.1: Road vehicle non-traffic crashes – high-threat-to-life injury rates per 100,000 population for drivers and passengers of motor vehicles by state or territory of usual residence, Australia, 2001 to 2010





Notes

1. Data for this figure can be found in Table A1.12, Appendix A (rates) and Table C1.16, Appendix C (annual rates of change).
2. The rates for pedestrians in Tasmania, the Australian Capital Territory and the Northern Territory have been suppressed due to small numbers.

Figure 5.4.3: Road vehicle non-traffic crashes – high-threat-to-life injury rates per 100,000 population for pedestrians by state or territory of usual residence, Australia, 2001 to 2010

Table 5.4.3: Road vehicle non-traffic crashes – high-threat-to-life injury counts by state or territory of usual residence and remoteness area of usual residence, Australia, 2001 to 2010

Remoteness area of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW										
Major city	313	303	304	376	426	342	348	347	388	359
Inner regional	178	187	180	237	228	202	236	259	277	216
Outer regional	94	100	115	94	136	111	90	133	110	129
Remote	20	10	14	9	19	8	14	10	13	16
Very remote	6	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.
Vic										
Major city	309	274	255	240	307	288	315	290	295	298
Inner regional	173	169	143	147	175	191	183	181	195	178
Outer regional	74	46	50	53	58	50	59	57	54	46
Remote	n.p.	n.p.	n.p.	n.p.	0	n.p.	n.p.	n.p.	0	0
Qld										
Major city	193	192	209	240	234	211	245	268	292	276
Inner regional	170	154	144	135	153	143	158	132	161	132
Outer regional	150	105	118	108	114	121	122	125	126	120
Remote	36	47	23	37	31	28	20	29	30	25
Very remote	31	28	35	20	23	18	21	19	14	22
WA										
Major city	129	105	106	102	141	110	111	138	148	143
Inner regional	42	35	25	23	31	22	29	37	36	40
Outer regional	44	45	35	28	55	43	39	39	38	30
Remote	33	32	34	26	34	21	26	28	18	29
Very remote	12	15	20	11	10	7	10	14	17	17
SA										
Major city	69	103	75	110	110	106	82	81	97	69
Inner regional	43	34	33	32	40	42	36	40	32	29
Outer regional	34	44	45	51	36	38	46	47	58	35
Remote	12	13	9	9	18	6	11	10	17	11
Very remote	6	n.p.	5	n.p.	9	n.p.	n.p.	n.p.	n.p.	n.p.
Tas										
Inner regional	25	23	19	41	33	26	34	39	28	39
Outer regional	35	27	23	28	20	28	20	47	30	25
Remote	n.p.	0	0	0	n.p.	n.p.	n.p.	0	n.p.	0
Very remote	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	0	n.p.	n.p.

(continued)

Table 5.4.3 (continued): Road vehicle non-traffic crashes – high-threat-to-life injury counts by state or territory of usual residence and remoteness area of usual residence, Australia, 2001 to 2010

Remoteness area of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
ACT										
Major city	29	29	32	34	34	19	31	42	47	43
Inner regional	0	0	0	0	0	0	0	0	n.p.	0
NT										
Outer regional	13	12	11	11	20	15	21	13	20	25
Remote	6	15	8	10	18	10	15	17	18	14
Very remote	8	9	8	10	9	7	6	n.p.	5	10
Australia										
Major city	1,042	1,006	981	1,102	1,252	1,076	1,132	1,166	1,267	1,188
Inner regional	631	602	544	615	660	626	676	688	729	634
Outer regional	444	379	397	373	439	406	397	461	436	410
Remote	111	120	89	95	121	77	88	95	98	95
Very remote	64	60	71	47	55	40	42	40	42	55

Appendix A: Tables of population-based rates

The values charted in the figures in Chapter 5 are tabulated here, except in instances in where the values are tabulated as well as charted in Chapter 5.

Table A1.1: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population by case type, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Occupant of MV ^{(a)(b)}	23.6	21.7	22.3	21.6	22.5	22.6	22.4	21.4	21.7	19.8
<i>Driver</i>	13.8	12.8	13.6	13.7	13.8	14.0	13.8	13.5	13.6	12.6
<i>Passenger</i>	8.2	7.4	7.4	6.7	7.6	7.5	7.4	7.1	7.2	6.3
Motor cycle rider	5.8	6.2	5.9	6.4	7.3	8.4	8.5	8.9	8.8	8.1
Pedal cycle rider	2.4	2.9	2.9	3.2	3.7	3.7	4.2	4.1	4.7	4.9
Pedestrian	5.1	4.5	4.6	4.5	4.6	4.6	4.7	4.4	4.4	4.3

(a) Occupants of motor vehicles except motorcycles.

(b) Includes cases where the injured person was an occupant of a motor vehicle but it was not stated whether as a driver or a passenger.

Table A1.2: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population by case type and state or territory of usual residence, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Motor vehicle driver										
NSW	11.5	9.7	11.1	12.1	12.2	12.7	11.8	11.3	10.6	10.7
Vic	16.7	14.7	15.8	15.6	15.4	15.3	15.9	14.9	16.0	15.2
Qld	13.0	13.1	14.2	13.2	13.3	13.6	13.0	13.2	12.8	11.9
WA	10.9	10.5	10.7	11.1	10.9	11.6	11.7	12.9	13.1	11.0
SA	18.9	18.7	17.4	16.4	15.1	17.0	16.3	16.9	14.9	13.8
Tas	13.7	15.9	12.1	13.1	20.6	15.3	19.2	18.3	18.5	15.4
ACT	9.7	11.2	11.8	12.7	12.8	12.1	13.1	11.8	15.2	12.8
NT	18.6	20.5	23.8	23.1	21.4	24.7	23.0	23.9	24.9	18.1
Motor vehicle passenger										
NSW	6.3	6.6	6.2	5.5	7.1	6.0	5.6	5.9	5.9	4.9
Vic	8.4	7.1	7.9	6.8	7.4	7.6	7.3	7.4	7.1	6.7
Qld	8.0	7.5	7.2	6.0	7.0	7.0	7.1	6.2	6.6	5.7
WA	8.0	6.5	6.7	7.8	6.1	7.3	8.1	7.3	7.8	7.1
SA	11.8	9.1	8.1	7.3	10.2	9.5	9.6	7.5	7.9	6.2
Tas	7.7	5.3	5.9	7.3	5.2	7.0	10.5	6.6	7.2	7.1
ACT	7.6	3.8	7.1	4.0	5.5	7.3	6.2	6.4	4.4	6.8
NT	17.3	17.6	18.4	16.9	21.8	25.2	22.5	27.7	23.7	19.9

(continued)

Table A1.2 (continued): Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population by case type and state or territory of usual residence, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Motor cycle rider										
NSW	5.0	4.8	4.8	5.9	6.6	7.8	7.2	7.7	7.9	7.5
Vic	5.6	5.9	5.7	5.6	6.2	7.3	7.5	7.6	7.7	6.8
Qld	7.2	8.9	8.2	8.1	10.2	10.3	11.1	11.4	11.6	9.3
WA	4.7	5.1	5.3	6.2	6.7	8.0	7.6	9.2	7.7	9.4
SA	6.5	5.8	5.0	6.6	6.9	8.8	9.1	8.5	8.6	7.9
Tas	7.1	6.4	7.8	5.1	6.1	7.9	10.1	7.7	8.9	8.3
ACT	5.8	5.9	3.8	5.9	6.1	8.3	10.0	10.9	6.7	9.3
NT	6.5	10.3	10.7	10.0	8.6	16.5	12.1	14.2	19.5	14.4
Pedal cycle rider										
NSW	2.0	2.5	2.9	2.8	3.3	3.4	3.5	3.7	3.4	3.9
Vic	2.7	2.9	3.2	3.4	4.1	3.9	4.8	4.3	5.7	6.3
Qld	3.0	3.7	2.9	3.9	4.1	3.5	4.2	4.4	4.7	4.9
WA	2.2	2.3	2.0	2.6	2.5	2.6	3.5	3.2	4.5	3.4
SA	2.1	3.0	3.1	3.2	4.0	4.3	4.6	4.9	5.0	5.0
Tas	2.6	2.0	2.4	2.1	3.2	4.0	4.4	3.1	4.8	4.2
ACT	1.5	2.8	3.5	1.8	4.5	5.6	4.2	7.6	8.1	7.0
NT	5.8	3.3	5.1	5.6	7.7	4.6	6.5	3.5	5.0	7.9
Pedestrian										
NSW	5.1	4.0	5.1	5.3	4.7	5.1	4.9	4.6	4.3	4.2
Vic	6.2	5.7	5.0	4.4	4.8	4.9	5.2	4.7	4.8	5.2
Qld	4.1	4.0	3.4	3.7	4.4	3.5	4.7	3.6	3.6	3.0
WA	3.7	2.6	4.1	2.9	3.3	3.7	3.1	3.7	3.7	3.5
SA	4.9	5.3	4.1	3.7	3.9	4.5	3.9	4.1	4.2	3.7
Tas	2.8	4.4	3.3	3.5	4.9	4.2	2.8	4.6	3.9	4.1
ACT	3.0	3.8	1.7	3.8	3.2	1.6	1.4	2.2	3.5	3.6
NT	13.5	5.6	14.4	9.9	8.7	6.0	5.7	7.6	11.1	11.0

Table A1.3: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population by remoteness of usual residence, Australia, 2001 to 2010

Remoteness area of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Major city	31.0	28.8	29.7	30.1	32.1	33.8	34.3	33.4	33.6	32.2
Inner regional	45.7	45.9	45.5	44.8	47.2	47.0	48.9	47.8	47.4	45.2
Outer regional	51.8	47.8	51.0	48.3	55.5	54.4	51.8	53.2	54.6	45.2
Remote	52.7	58.7	53.7	48.6	53.4	66.2	64.0	75.7	71.7	62.6
Very remote	77.8	86.9	75.9	85.9	82.1	79.3	77.6	74.6	91.0	88.3

Table A1.4: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population for residents of major cities by state or territory of usual residence, Australia, 2001 to 2010

State or territory of usual residence	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
NSW	27.2	24.7	27.6	29.5	31.3	32.7	29.6	29.8	28.5	27.4
Vic	38.5	33.9	35.3	33.4	36.2	37.4	39.8	35.8	37.6	37.5
Qld	28.8	29.7	27.9	28.3	29.9	32.3	36.2	35.2	36.4	32.8
WA	27.3	22.9	25.6	27.5	27.5	29.5	30.1	32.8	33.7	31.2
SA	33.0	35.2	29.2	29.0	31.9	34.2	37.2	36.5	34.3	31.8
ACT	27.9	29.5	30.5	30.1	33.3	35.9	35.7	39.3	39.6	40.7

Table A1.5: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population by age and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Males										
0–4	8.2	6.9	6.6	5.3	6.7	6.2	4.5	4.5	4.0	5.9
5–14	19.0	19.4	17.4	18.9	19.7	20.6	18.3	19.0	16.9	13.2
15–24	106.1	100.7	101.6	101.8	105.8	108.8	99.6	102.9	95.7	89.7
25–44	59.5	61.7	60.9	61.0	65.9	69.0	72.7	67.7	68.9	64.2
45–64	37.3	35.6	36.5	40.2	41.8	47.4	52.7	51.5	57.9	53.9
65+	42.3	40.4	41.1	41.6	41.2	44.8	43.7	47.5	49.6	52.4
Females										
0–4	5.3	5.9	4.8	3.2	6.7	4.2	4.5	4.8	3.6	3.4
5–14	10.4	9.2	9.9	9.2	9.5	9.3	8.6	8.0	8.7	6.1
15–24	48.8	41.9	46.4	42.3	47.1	46.2	42.7	41.9	43.1	39.2
25–44	23.1	20.0	23.1	21.2	21.9	22.8	23.9	22.2	23.0	20.3
45–64	22.4	20.2	20.8	20.4	22.6	21.6	21.7	21.9	23.2	21.4
65+	33.0	30.8	29.8	31.2	33.6	31.8	35.7	35.5	34.7	34.8

Table A1.6: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population for motor vehicle occupants by age and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Males										
0–4	3.8	4.3	4.1	2.9	3.6	3.9	2.5	2.0	1.8	4.3
5–14	6.0	5.7	5.1	4.6	5.6	5.8	5.0	4.8	5.9	3.8
15–24	65.8	64.3	65.3	63.0	65.7	66.4	60.3	57.6	54.6	51.0
25–44	32.1	30.8	31.0	29.6	30.8	31.7	33.6	30.2	30.0	28.1
45–64	21.2	18.5	19.4	20.0	19.4	20.2	21.2	20.5	21.9	18.0
65+	26.4	25.1	25.1	26.3	24.4	25.5	23.2	25.0	27.6	30.0
Females										
0–4	3.4	4.8	3.5	1.3	4.8	3.0	3.2	3.6	2.6	1.7
5–14	5.2	4.6	4.6	4.9	4.5	5.1	3.9	4.6	5.0	3.5
15–24	40.0	35.5	40.0	35.1	39.5	37.7	34.4	33.1	34.1	31.0
25–44	18.3	15.2	17.5	16.3	16.3	16.4	17.4	16.1	16.3	13.5
45–64	18.5	16.1	15.8	15.4	17.2	16.0	15.9	15.3	16.4	14.1
65+	24.3	22.3	20.0	22.8	22.4	23.5	25.7	26.2	25.7	25.4

Table A1.7: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population for motorcycle riders by age and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Males										
5–14	1.9	2.0	1.1	1.8	1.9	3.1	1.9	3.3	2.0	2.0
15–24	24.0	21.3	21.7	22.5	22.8	26.6	25.0	27.9	22.7	21.7
25–44	17.5	20.4	18.9	19.9	23.0	25.6	24.6	24.6	24.5	21.8
45–64	7.4	8.0	7.5	9.2	11.7	14.7	17.3	17.0	20.1	19.2
65+	1.7	2.1	2.4	2.3	2.9	3.3	3.4	5.0	5.4	5.1
Females										
15–24	1.7	1.7	1.3	2.1	1.7	1.5	2.2	2.0	2.7	2.4
25–44	1.1	1.4	1.4	1.4	1.8	2.2	2.0	1.9	1.8	1.4
45–64	0.8	0.9	1.3	1.0	1.4	1.2	1.7	2.0	2.0	2.0

Note: The rates for males and females aged 0–4 years, and females aged 5–14 years and 65 years and over, have been suppressed due to small cell counts.

Table A1.8: Road vehicle non-traffic crashes – high-threat-to-life injury rates per 100,000 population for motorcycle riders by age and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Males										
5–14	6.1	5.2	7.8	7.4	7.4	6.3	7.2	8.4	7.6	8.9
15–24	20.1	17.4	17.4	19.9	22.6	20.8	22.6	21.5	21.9	18.2
25–44	9.9	10.4	10.6	10.4	13.7	11.4	12.7	11.8	11.6	10.9
45–64	3.9	3.2	3.7	3.7	3.9	4.4	4.8	5.2	6.0	5.5
65+	1.1	1.6	1.6	1.3	1.7	1.0	1.7	1.6	1.9	1.0
Females										
5–14	0.8	1.2	1.1	0.8	1.3	1.1	1.0	0.8	1.0	0.5
15–24	0.8	1.2	1.3	0.9	1.4	2.0	1.4	1.0	1.4	2.0
25–44	0.3	0.3	0.4	0.7	0.6	0.7	0.5	0.7	0.4	0.5
45–64	0.4	0.1	0.3	0.5	0.4	0.5	0.3	0.5	0.4	0.4

Note: The rates for males and females aged 0–4 years, and females aged 65 years and over, have been suppressed due to small cell counts.

Table A1.9: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population for pedal cycle riders by age and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Males										
5–14	5.6	6.6	6.2	6.8	8.0	6.8	6.9	7.3	5.9	4.8
15–24	5.9	6.7	5.2	8.2	8.8	7.1	5.1	7.0	8.0	7.7
25–44	3.9	5.1	5.7	5.5	6.3	6.3	7.7	6.7	8.0	8.2
45–64	4.0	4.6	4.8	5.6	6.2	7.8	9.8	9.3	11.7	12.3
65+	4.0	3.4	3.6	3.6	5.2	5.7	6.9	7.3	7.6	9.0
Females										
5–14	1.2	1.2	1.4	1.6	1.4	1.5	2.2	1.0	0.5	0.8
15–24	1.0	1.2	1.1	0.7	1.1	1.2	1.4	1.2	1.1	1.7
25–44	0.7	0.9	1.4	1.2	1.2	1.1	1.3	1.7	1.9	2.3
45–64	0.5	0.9	0.7	0.9	1.1	1.0	1.3	1.4	2.0	2.1
65+	0.4	0.4	0.5	0.4	0.9	0.7	0.5	0.6	0.6	0.5

Note: The rates for males and females aged 0–4 years have been suppressed due to small cell counts

Table A1.10: Road vehicle non-traffic crashes – high-threat-to-life injury rates per 100,000 population for pedal cycle riders age and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Males										
5–14	8.9	9.9	8.4	8.3	9.0	8.7	10.9	9.8	9.9	6.4
15–24	5.1	6.5	5.7	7.0	7.0	8.5	7.1	6.6	7.8	6.4
25–44	3.2	3.1	2.5	3.0	3.6	3.3	2.8	4.0	3.4	3.7
45–64	2.6	2.6	3.1	3.2	4.1	2.9	3.0	3.4	5.3	4.5
65+	3.7	1.8	2.1	2.9	3.3	3.0	2.8	2.8	3.3	3.7
Females										
5–14	1.5	1.6	1.4	1.8	1.1	1.6	0.8	1.2	1.0	1.0
15–24	0.5	n.p.	0.9	0.6	0.6	0.9	n.p.	0.6	1.3	0.5
25–44	0.4	0.5	0.3	0.3	0.4	0.5	0.4	0.4	0.5	0.5
45–64	0.4	0.6	0.4	0.8	1.0	0.9	0.8	0.7	0.6	0.8

Note: The rates for males and females aged 0–4 years, and females aged 65 years and over, have been suppressed due to small numbers, as have rates for some years for females aged 15–24 years.

Table A1.11: Road vehicle traffic crashes – high-threat-to-life injury rates per 100,000 population for pedestrians by age and sex, Australia, 2001 to 2010

Age group	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Males										
0–4	3.7	2.1	1.5	2.1	2.0	1.5	1.3	2.5	1.8	1.2
5–14	5.1	5.0	4.7	5.6	4.0	4.8	4.3	3.3	2.9	2.5
15–24	10.1	8.1	9.0	7.4	7.6	8.2	8.6	9.0	9.0	8.3
25–44	5.8	5.2	4.9	5.5	5.4	5.2	6.5	5.5	5.8	5.7
45–64	4.6	4.5	4.5	5.1	4.1	4.2	4.1	3.9	3.7	4.4
65+	9.9	9.3	9.1	8.7	8.2	9.6	9.6	9.4	8.1	7.8
Females										
0–4	1.9	1.1	1.1	1.6	1.8	1.3	1.2	0.9	1.0	1.6
5–14	3.6	3.1	3.4	2.3	3.4	2.2	2.0	2.1	3.0	1.6
15–24	5.8	3.4	3.9	4.2	4.4	5.1	4.2	4.8	4.6	3.9
25–44	2.9	2.5	2.6	2.0	2.5	3.0	2.9	2.2	2.6	2.9
45–64	2.5	2.3	2.8	2.8	2.8	3.3	2.6	2.9	2.7	3.1
65+	8.1	7.8	8.8	7.3	9.4	7.4	8.2	7.4	7.4	8.2

Table A1.12: Road vehicle non-traffic crashes – high-threat-to-life injury rates per 100,000 population by case type and state or territory of usual residence, Australia, 2001 to 2010

Case type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Motor vehicle driver										
NSW	1.5	1.6	1.4	2.0	1.9	1.5	1.5	1.7	2.2	1.5
Vic	2.7	1.8	1.7	1.4	1.5	1.4	1.6	1.3	1.0	1.0
Qld	3.8	2.5	2.6	2.7	2.3	1.6	2.3	2.0	2.6	2.4
WA	2.8	2.1	1.4	1.8	2.4	1.9	1.8	2.5	2.7	2.9
SA	2.5	2.2	2.3	3.0	2.1	1.6	2.1	1.6	2.2	1.1
Tas	4.5	3.7	2.8	4.6	2.8	n.p.	2.6	6.0	4.4	2.8
NT	3.4	3.9	n.p.	4.1	7.1	2.3	3.0	7.0	n.p.	5.1
Motor vehicle passenger										
NSW	1.3	1.2	1.1	1.0	1.2	0.7	0.8	0.8	0.9	0.7
Vic	1.2	1.2	0.6	0.8	1.2	0.9	0.8	0.8	0.7	0.6
Qld	2.2	1.7	1.5	1.5	1.5	1.1	1.0	1.6	1.1	0.9
WA	1.4	1.8	1.6	0.7	1.1	0.9	1.0	1.0	0.6	1.0
SA	1.8	1.6	1.2	1.2	1.8	1.3	0.4	1.2	0.6	0.6
Tas	1.3	1.0	1.3	1.1	n.p.	1.7	1.1	0.6	1.3	1.2
NT	2.1	2.9	2.3	2.1	4.1	n.p.	2.5	n.p.	2.9	2.0
Motor cycle rider										
NSW	3.7	3.2	3.7	4.3	5.1	4.1	4.6	4.7	4.4	4.6
Vic	3.6	3.4	3.7	3.1	4.1	4.2	4.2	4.1	4.7	3.9
Qld	4.9	5.0	5.7	5.5	5.8	5.8	6.6	5.9	5.5	5.5
WA	5.0	4.2	4.2	3.7	4.9	4.4	4.6	5.6	4.9	3.9
SA	3.6	4.1	4.1	5.4	5.5	5.2	5.6	4.5	6.1	4.7
Tas	3.2	3.6	3.4	4.7	4.6	4.5	5.2	7.8	5.4	4.2
ACT	3.2	3.8	3.4	4.1	3.1	n.p.	2.2	3.3	3.4	3.5
NT	3.0	5.7	4.9	3.6	8.6	8.0	8.4	3.2	7.9	7.5
Pedal cycle rider										
NSW	1.7	2.0	1.6	2.2	2.4	2.4	2.0	2.5	2.5	2.3
Vic	2.6	2.4	2.0	2.6	2.7	2.8	3.1	2.7	2.6	2.8
Qld	2.7	2.6	2.7	2.6	2.7	2.8	2.7	2.8	3.8	2.6
WA	2.8	2.1	2.4	2.4	3.4	1.8	1.6	1.8	2.5	2.2
SA	1.6	3.2	2.8	1.9	2.5	3.0	2.4	2.7	3.2	2.0
Tas	2.9	1.9	1.0	3.4	1.6	4.7	1.8	2.6	1.1	3.3
ACT	3.3	2.2	3.2	2.2	4.5	1.5	4.8	6.7	7.8	6.5

(continued)

Table A1.12 (continued): Road vehicle non-traffic crashes – high-threat-to-life injury rates per 100,000 population by case type and state or territory of usual residence, Australia, 2001 to 2010

Road user type	Year of hospitalisation									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Pedestrian										
NSW	0.7	0.6	0.8	0.9	1.0	0.7	0.8	0.8	0.7	0.7
Vic	0.9	0.8	0.7	0.8	0.8	0.8	0.7	0.8	0.7	0.9
Qld	1.2	1.3	1.0	0.8	0.9	0.6	0.5	0.8	0.9	1.2
WA	0.8	1.3	1.1	0.8	1.1	0.5	0.8	0.5	0.5	1.2
SA	1.1	1.1	0.6	1.5	1.3	0.9	0.7	0.9	0.8	0.5

Notes

1. The rates for motor vehicle drivers in the Australian Capital Territory have been suppressed due to small numbers, as have rates for motor vehicle drivers in Tasmania and the Northern Territory for some years.
2. The rates for motor vehicle passengers in Tasmania, the Australian Capital Territory and the Northern Territory have also been suppressed due to small numbers.
3. The rate for pedal cycle riders in the Northern Territory has been suppressed due to small numbers as has the rate for motorcycle riders in the Australian Capital Territory for 2006.
4. The rates for pedestrians in Tasmania, the Australian Capital Territory and the Northern Territory have been suppressed due to small numbers.

Appendix B: Data issues

Data sources

The data on hospital separations are from the Australian Institute of Health and Welfare's (AIHW) National Hospital Morbidity Database (NHMD). Comprehensive information on the quality of the data for 2010–11 is available in *Australian hospital statistics 2010–11* (AIHW 2012a) and the data quality statement. Essentially all injury cases admitted to hospitals in Australia are included in the NHMD data reported.

Diagnoses and external causes of injury and poisoning were recorded using the *International statistical classification of diseases and related health problems, 10th revision, Australia modification* (ICD-10-AM). The second edition of ICD-10-AM was introduced for episodes in hospital that ended on or after 1 July 2000, and a new edition was introduced on 1 July of the even-numbered years thereafter during the period covered by this report (NCCH 2000, 2002, 2004, 2006, 2008, 2010).

Denominators for age-specific and age-standardised rates were estimated using resident population (ERP) values as at 31 December of the relevant year. Australian ERPs for 30 June 2001 (persons, by 5-year age groups to an oldest group of 85 and older) were used as the standardising population throughout the report (see Rates).

Definitions

The *principal diagnosis* is the diagnosis established after study to be chiefly responsible for occasioning the patient's episode of admitted patient care (AIHW 2012b).

An *external cause* is defined as the environmental event, circumstance or condition that was the cause of injury or poisoning. Whenever a patient has a principal or additional diagnosis of an injury or poisoning, an external cause code should be recorded.

A *separation* is defined as:

A process by which an episode of care for an admitted patient ceases. A separation may be formal or statistical (AIHW 2012b).

Serious injury is defined for this report as an injury that results in the person being admitted to hospital and subsequently discharged alive either on the same day or after one or more night's stay in a hospital bed (that is, deaths in hospital are excluded).

High-threat-to-life serious injury cases are a subset of the serious injury cases described, also referred to as life-threatening injuries. They are selected on the basis of having an ICD-based Injury Severity Score (ICISS) of less than 0.941. Further information on ICISS is provided.

Selection criteria

This report is intended to describe the population incidence of road vehicle traffic crash injuries that resulted in admission to a hospital. The criteria used to select cases for this report included the following:

- Admitted patient episodes for an Australian hospital that ended in the period 1 January 2001 to 31 December 2010.
- Principal diagnosis is any code in ICD-10-AM Chapter XIX *Injury, poisoning and certain other consequences of external causes* codes (S00–T98).
- First reported external cause of morbidity is any code in the section of Chapter XX *External causes of morbidity and mortality* of ICD-10-AM for unintentional land transport events (V00–V89).
- Mode of admission field has any value except the one indicating that transfer from another acute-care hospital had occurred.
- Mode of separation field has any value except the one indicating that the person died while in hospital.

Application of these criteria selected 495,653 records, which is the estimated number of unintentional serious injury cases due to land transport in the study period. Records meeting the definition of road vehicle traffic crash, which are a subset of these records, are described later in this section.

Estimating incident cases

Each record in the NHMD refers to a single episode of care in a hospital. Some injuries result in more than one episode in hospital and, hence, more than one NHMD record. This can occur in two main ways:

- A person is admitted to one hospital, then transferred to another or has a change in care type (for example, acute to rehabilitation) within the one hospital.
- A person has an episode of care in hospital, is discharged home (or to another place of residence) and is then admitted for further treatment for the same injury, to the same hospital or another one.

The NHMD does not include information designed to enable the set of records belonging to an injury case to be recognised as such. Hence, there is potential for some incident injury cases to be counted more than once if a single incident injury case results in two or more NHMD records being generated, all of which satisfy the selection criteria being used.

Information in the NHMD enables this problem to be reduced, though not eliminated. The approach used for this report makes use of the Mode of admission variable, which indicates whether the current episode began with inward transfer from another acute care hospital. Episodes of this type (inward transfers) are likely to have been preceded by another episode that also met the case selection criteria for injury cases, so are omitted from our estimated case counts.

This procedure should largely correct for over-estimation of cases that is due to transfers, but will not correct for over-estimation that is due to readmissions.

Out-of-scope separations related to land transport

There are two types of NHMD separation records in which an unintentional land transport event is mentioned (V00–V89), but not included by the selection criteria. They are records in which:

1. The first-reported external cause code is in the range, but the Principal Diagnosis code was not from the ICD injury chapter (S00–T98): 77,936 separation records. The most common Principal Diagnoses were *Care involving use of rehabilitation procedure, unspecified* (Z50.9, $n = 33,776$), *Examination and observation following transport accident* (Z04.1, $n = 8,018$), *Cervicalgia* (M54.2, $n = 2,146$), *Other specified surgical follow-up care* (Z48.8, $n = 1,851$), *Cellulitis of lower limb* (L03.11, $n = 1,429$) and *Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium* (O99.8, $n = 1,393$). These records were excluded because the main reason for the episode in hospital was not coded as being an injury. Also, episodes with a principal diagnosis code for rehabilitation are likely to refer to cases for which a record for acute care is in-scope.
2. A code for an unintentional land transport event appears as an additional external cause code but not as the first-reported external cause code ($n = 5,179$ separation records). These were excluded on the grounds that injury due to a transport accident was not recorded as being the main reason for the episode in hospital.

Reporting categories of cases

The reporting categories used in this report are aggregations of categories in the *External causes of morbidity and mortality* chapter of ICD-10-AM.

Road vehicle traffic crashes

Cases were defined as being due to road vehicle traffic crashes if they had a first reported ICD-10-AM external cause code specified as being for use in traffic cases: V00–V06.[1], V09.2, V09.3, V10–V18.[4,5,9], V19.[4,5,6,9], V20–V28.[4,5,9], V29.[4,5,6,9], V30–V38.[5,6,7,9], V39.[4,5,6,9], V40–V48.[5,6,7,9], V49.[4,5,6,9], V50–58.[5,6,7,9], V59.[4,5,6,9], V60–V68.[5,6,7,9], V69.[4,5,6,9], V70–V78.[5,6,7,9], V79.[4,5,6,9], V81.1, V82.1, V82.9, V83–V86.[0,1,2,3], V87, V89.2, V89.3.

Key: In the list shown above, V00–V06.[1] includes all cases where the first reported external cause code is in the range V00 to V06 and the fourth character is 1.

The ICD-10-AM instructs coders that if it is not specified whether a case occurred in traffic, then they should assume that it did not occur in traffic if the event is classifiable to categories V83–V85, which refer to special vehicles for industry, agriculture and construction, or to V86, which refers to special all-terrain vehicles not normally registrable for on-road use. Otherwise, coders are instructed to assume that injurious events involving land vehicles occurred in traffic.

Road vehicle non-traffic crashes

Cases were defined as being due to road vehicle non-traffic crashes if they had a first reported ICD-10-AM external cause code specified as being for use in non-traffic cases: V00–V06.[0], V09.0, V09.1, V10–V18.[0,1,2], V19.[0,1,2,3], V20–V28.[0,1,2], V29.[0,1,2,3], V30–V38.[0,1,2,3], V39.[0,1,2,3], V40–V48.[0,1,2,3], V49.[0,1,2,3], V50–58.[0,1,2,3], V59.[0,1,2,3],

V60-V68.[0,1,2,3], V69.[0,1,2,3], V70-V78.[0,1,2,3], V79.[0,1,2,3], V81.0, V82.0, V83-V86.[5,6,7,9], V88, V89.0, V89.1.

Case type

The types presented in some tables and figures relate to the role of the person injured in the crash (or road user category):

Traffic crashes

Occupant of motor vehicle: V30-V38.[5,6,7,9], V39.[4,5,6,9], V40-V48.[5,6,7,9], V49.[4,5,6,9], V50-58.[5,6,7,9], V59.[4,5,6,9], V60-V68.[5,6,7,9], V69.[4,5,6,9], V70-V78.[5,6,7,9], V79.[4,5,6,9], V81.1, V82.1, V82.9, V83-V86.[0,1,2,3].

Driver (of motor vehicle): V30-V38.[5], V39.[4], V40-V48.[5], V49.[4], V50-58.[5], V59.[4], V60-V68.[5], V69.[4], V70-V78.[5], V79.[4], V83-V86.[0].

Passenger (of motor vehicle): V30-V38.[6], V39.[5], V40-V48.[6], V49.[5], V50-58.[6], V59.[5], V60-V68.[6], V69.[5], V70-V78.[6], V79.[5], V83-V86.[1].

Motorcycle rider: V20-V28.[4,5,9], V29.[4,5,6,9].

Pedal cycle rider: V10-V18.[4,5,9], V19.[4,5,6,9].

Pedestrian: V00-V06.[1], V09.2, V09.3.

Other or unknown: V87, V89.2, V89.3.

Non-traffic crashes

Occupant of motor vehicle: V30-V38.[0,1,2,3], V39.[0,1,2,3], V40-V48.[0,1,2,3], V49.[0,1,2,3], V50-58.[0,1,2,3], V59.[0,1,2,3], V60-V68.[0,1,2,3], V69.[0,1,2,3], V70-V78.[0,1,2,3], V79.[0,1,2,3], V81.0, V82.0, V83-V86.[5,6,7,9].

Driver (of motor vehicle): V30-V38.[0], V39.[0], V40-V48.[0], V49.[0], V50-58.[0], V59.[0], V60-V68.[0], V69.[0], V70-V78.[0], V79.[0], V83-V86.[5].

Passenger (of motor vehicle): V30-V38.[1], V39.[1], V40-V48.[1], V49.[1], V50-58.[1], V59.[1], V60-V68.[1], V69.[1], V70-V78.[1], V79.[1], V83-V86.[6]. *Motorcycle rider*: V20-V28.[0,1,2], V29.[0,1,2,3].

Pedal cycle rider: V10-V18.[0,1,2], V19.[0,1,2,3].

Pedestrian: V00-V06.[0], V09.0, V09.1.

Other or unknown: V88, V89.0, V89.1.

Notes on reporting categories:

1. The ICD-10-AM provides categories for persons identified as having been a *Driver* or a *Passenger* of a motor vehicle when injured. The ICD-10-AM also provides categories for use when people were injured in events involving motor vehicles in other circumstances, namely as a 'person on the outside' of the vehicle, a 'person injured while boarding or alighting', or an 'unspecified occupant'. All of these types have been included in the category *Occupant of motor vehicle*. Due to the small numbers of cases of the latter three types, they are not presented separately. The difference between the count of *Occupant of motor vehicle* and the sum of the counts for *Driver* and for *Passenger* is the overall number of these types of case.

2. *Motorcycle rider* and *Pedal cycle rider* include drivers, passengers, people boarding or alighting and unspecified users of these types of vehicles.
3. *Pedestrian* includes any person injured in a road vehicle crash who, at the time of the event, was not riding in or on a vehicle, or on an animal. It includes people on foot and also people in or on pedestrian conveyances such as skateboards and wheelchairs.

Rates

Age-standardisation

Population-based rates were generally age-standardised except where they are age-specific. This adjustment allows for comparison without distortion due to population age group differences. Direct standardisation was used to age-standardise rates, using the Australian population in 2001 as the standard (ABS 2003) and using 5-year age groups except for an oldest group of 85 years and older. Age-standardised rates were calculated in Stata version 12.1 statistical software using the `-dstdize-` command (StataCorp 2012).

Population denominators

General population

With the exception of tables 5.3.3 and 5.3.4 and figures 5.3.5 and 5.3.6, all rates in this report were calculated using, as the denominator, the final estimate of the estimated resident population as at 30 June in the relevant year (for example, 30 June 2006 for 2006 cases).

Registered vehicles

The rates in tables 5.3.3 and 5.3.4 and figures 5.3.5 and 5.3.6 were calculated using, as the denominator, the number of each vehicle type registered, by state or territory, sourced from the ABS annual *Motor vehicle census, Australia* reports (ABS cat. no. 9309.0).

Jurisdictions

As in previous reports, place of usual residence is the basis on which case counts and rates were calculated for states and territories. The state or territory of usual residence is not necessarily the state or territory of hospitalisation or the state or territory in which the crash occurred.

Estimated change in rates over time

Estimated trends in rates of separations were reported as average annual per cent change over the 10-year study period, obtained using Poisson regression modelling using Stata 12.1 (StataCorp 2012).

Unless otherwise stated, a reported 'increase' or 'decrease' in rates over the period from 2001 to 2010 indicates an outcome that was *statistically significant* ($p < 0.05$ or less).

Population-based rates of injury tend to have similar values from one year to the next. Exceptions to this can occur (for example, due to a mass-casualty disaster) but are unusual in Australian injury data. Some year-to-year variation and other short-run fluctuations are to be

expected, due to unknown and essentially random factors and so small changes in rates over a short period normally do not provide a firm basis for asserting that a trend is present.

However, the period covered by this report (10 years) is long enough for noteworthy changes to occur. Important questions to ask with a series of annual estimates of population-based rates are whether they show statistically significant rises or falls over the period and, if so, the average rate of change. Analysis in this report is limited to answering these two questions.

For each type of injury for which estimates of change were made:

- Age-adjusted annual case numbers were obtained by multiplying age-adjusted unscaled rates by the Australian population in the corresponding year.
- Poisson regression, a method suitable for count-based data, was run with the adjusted case numbers as the dependent variable, year (as an integer, from 0 to the number of years of data) as an independent variable and annual population as the exposure. The relevant outputs are a modelled rate for each year and a model-based estimate of average annual change in rate and its 95% confidence interval (CI).

Interpretation: If the 95% CI around the point estimate for trend is entirely above zero then the rates have risen; if the 95% CI is entirely below zero then the rates have fallen; otherwise it cannot be said with useful confidence that the age-standardised rates rose or fell in the period considered.

Serious injury with a high threat to life

High-threat-to-life serious injury cases are a subset of the serious injury cases. These cases are also referred to as 'life-threatening' injuries. They are selected on the basis of having an ICD-based Injury Severity Score (ICISS) of less than 0.941. ICISS is a measure of injury severity based upon a patient's injury diagnoses. The ICISS measure for this report is based upon ICD-10-AM coding and was derived using Australian hospital separations data (Stephenson et al. 2004). ICISS involves calculating a Survival Risk Ratio (SRR), that is, the proportion of all cases with each individual injury diagnosis code as a proportion of the total number of patients with that diagnosis code. Thus, a given SRR approximates the likelihood that a patient will survive a particular injury, given survival long enough to allow admission to hospital. Each patient's ICISS score (survival probability) is the product of the probabilities of surviving each of their injuries individually. Hence, for a patient with a single injury, their ICISS is equal to the SRR for that injury, while for a patient with multiple injuries, their ICISS is equal to the product of the SRRs for all of those injuries. A patient's ICISS can vary from 0 (most life-threatening) to 1 (least life-threatening).

Five-year (2002–03 to 2006–07) and 9-year (2000–01 to 2008–09) trends in age-standardised rates from for those seriously injured with high threat to life in a road vehicle traffic crash have previously been reported (Henley & Harrison 2009; Henley & Harrison 2012). This report uses the same set of SRRs and method to calculate ICISS as used in those earlier reports.

There is potential for variation over time in admission practice, especially for lower severity cases (Harrison & Steenkamp 2002). There may also be jurisdictional differences in admission practice. Injuries with a high threat to life have been found to be less susceptible to changes over time in admission practice (Cryer & Langley 2006; Langley et al. 2003) and may also allow more accurate comparisons between jurisdictions.

Classification of remoteness area

Australia can be divided into several regions based on their distance from urban centres. This is considered to determine the range and types of services available. In this report, remoteness area refers to the place of usual residence of the person who was admitted to hospital, assigned on the basis of the reported Statistical Local Area (SLA) of residence.

The remoteness areas were specified according to the ABS Australian Standard Geographical Classification (ASGC). Remoteness categories were defined in a manner based on the Accessibility/Remoteness Index of Australia (ARIA). According to this method, remoteness is an index applicable to any point in Australia, based on road distance from urban centres of 5 sizes. The reported areas are defined as the following ranges of the index:

Major cities (for example, Sydney, Geelong, Gold Coast), ARIA index 0 to 0.2

Inner regional (for example, Hobart, Ballarat, Coffs Harbour), ARIA index >0.2 and ≤ 2.4

Outer regional (for example, Darwin, Cairns, Coonabarabran), ARIA index >2.4 and ≤ 5.92

Remote (for example, Alice Springs, Broome, Strahan), ARIA index of >5.92 and ≤ 10.53

Very remote (for example, Coober Pedy, Longreach, Exmouth), ARIA index >10.53 .

Most SLAs lie entirely within 1 of the 5 areas. If this was so for all SLAs, then each record could simply be assigned to the area in which its SLA lies. However, some SLAs overlap 2 or more of the areas. Records with these SLAs were assigned to remoteness areas in proportion to the area-specific distribution of the resident population of the SLA according to the 2006 Census. Each record in the set having a particular SLA code was randomly assigned to one or other of the remoteness areas present in it, in proportion to the resident population of that SLA.

Comparability with other reports

Australian hospitals use the ICD-10-AM, an Australian clinical modification of the ICD, when reporting data on people injured and subsequently admitted to hospital (morbidity data). The ICD-10-AM provides a nationally consistent basis for looking at morbidity due to injurious transport events of all kinds (road, rail, water and air). However, it is not necessarily consistent with the approach taken by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) or others in looking at transport safety. For example, road safety statistics compiled by BITRE are focused on crashes on public roads, whereas ICD covers road crashes both on and off public roads.

Serious injury data series published previously by BITRE for the period 1999–00 to 2002–03 excluded same-day separations from the definition of serious injury. Previously published AIHW reports dealing with serious injury due to land transport include same-day separations in the figures (for example, Berry & Harrison 2007; Berry & Harrison 2008; Henley & Harrison 2009). The threshold for serious injury in those reports is 'admitted to hospital', regardless of the length of stay.

For national road deaths, readers should refer to the 'Road safety/statistics' part of the BITRE website at www.btre.gov.au, where road death statistics are published monthly. For details on marine, rail and air safety, the Australian Transport Safety Bureau (ATSB) website should be consulted at www.atsb.gov.au.

Suppression of small cell counts in data tables

Cell counts in tables that have fewer than 5 cases have been suppressed, as have rates derived from them, to protect confidentiality and because values based on very small numbers are sometimes difficult to interpret. In the instances where only one cell in a row or column has a count of less than 5, counts of one or more other cells in the same row or column have generally also been suppressed. The abbreviation 'n.p.' has been used in these tables to denote these suppressions. For these tables, the totals include the suppressed information.

Data quality statement: National Hospital Morbidity Database

This section provides a summary of key issues relevant to interpretation of the National Hospital Morbidity Database (NHMD). Further information on the quality of the data for earlier years is available in relevant editions of the AIHW's *Australian hospital statistics* series of reports.

The full AIHW Data Quality Statement for the NHMD is accessible at:

<<http://meteor.aihw.gov.au/content/index.phtml/itemId/511338>>.

Summary of key issues

- The National Hospital Morbidity Database (NHMD) is a comprehensive data set that has records for all separations of admitted patients from essentially all public and private hospitals in Australia.
- For 2010–11, almost all public hospitals provided data for the NHMD. The exception was a mothercraft hospital in the ACT. The great majority of private hospitals also provided data, the exceptions being the private day hospital facilities in the ACT, the single private free-standing day hospital facility in the NT, and a small private hospital in Victoria. Coverage was similar for earlier years, with some more variation in the private sector, which is not expected to impact substantially on the statistics in this report.
- A record is included for each separation, not for each patient, so patients who separated more than once in the year have more than one record in the NHMD.
- The NHMD contains records from 1993–94 onwards. For each reference year, the NHMD includes records for admitted patient separations between 1 July and 30 June.
- The data reported for 2010–11 are broadly consistent with data reported for the NHMD for previous years.
- Although there are national standards for data on admitted patient care, and while the NHMD is a valuable source of information on admitted patient care, the data have limitations. For example, variations in admission practices and policies lead to variation among providers in the number of admissions for some conditions and there is apparent variation between states and territories in the use of statistical discharges and associated assignment of care types.
- States and territories are primarily responsible for the quality of the data they provide. However, the AIHW undertakes extensive validations on receipt of data. Data are checked for valid values, logical consistency and historical consistency. Where possible,

data in individual data sets are checked with data from other data sets. Potential errors are queried with jurisdictions, and corrections and resubmissions may be made in response to these edit queries. The AIHW does not adjust data to account for possible data errors or missing or incorrect values, except as stated.

- For 2010–11, principal diagnosis information was not provided for 882 public hospital separations and 3,306 private hospital separations.
- Caution should be used in comparing diagnosis, procedure and external cause data over time, as the ICD-10-AM and ACHI classifications and coding standards used for those data can change over time.
- Not all states provided information on the area of usual residence of the patient in the form of a Statistical Local Area (SLA) code for all presentations. In addition, not all states and territories provided the version of SLA specified in the NMDS. Where necessary, the AIHW mapped the supplied area of residence data for each presentation to the same SLA and to remoteness area categories based on the ABS ASGC Remoteness Structure for 2006. This mapping was done on a probabilistic basis. Because of the probabilistic nature of the mapping, the SLA and remoteness areas data for individual records may not be accurate; however, the overall distribution of records by geographical area is considered useful.
- The NHMD does not include episodes of non-admitted patient care provided in outpatient clinics or emergency departments. Patients in these settings may be admitted subsequently, in which case the care provided to them as admitted patients will be included in the NHMD.

Appendix C: Summary tables for estimated changes in rates over time

The main body of this report contains several estimates for changes in rates over time reported as average annual percentage change over the 10-year study period, estimated using Poisson regression modelling. The tables in this appendix show estimates relating to all instances of tables and charts showing changes in rates over time that are included in the main body of this report.

Ninety-five per cent confidence intervals (95% CI) are used to determine if any increase or decrease over the 10-year period is statistically significant ($p < 0.05$ or less). Hence, if the 95% CI around the point estimate for trend is entirely above zero, then any rise in rates is considered to be statistically significant. Alternatively, if the 95% CI around the point estimate for trend is entirely below zero, then any fall in rates is considered to be statistically significant.

Should zero be included within the lower and upper 95% CIs, then any rise or fall is not considered to be statistically significant. For the tables shown in this appendix, these instances are shown as 'Not significant'.

Table C1.1: Road vehicle traffic crashes – deaths, serious and high-threat-to-life injury annual rates of change, Australia, 2001 to 2010

Indicator	Annual rate of change
Deaths	-3.8% (95% CI: -3.3%, -4.4%)
Seriously injured	0.9% (95% CI: 0.8%, 1.1%)
High-threat-to-life	1.1% (95% CI: 0.9%, 1.4%)

Table C1.2: Road vehicle traffic crashes – serious injury annual rates of change by state or territory of usual residence, Australia, 2001 to 2010

State or territory of usual residence	Annual rate of change
NSW	0.9% (95% CI: 0.7%, 1.1%)
Vic	-0.5% (95% CI: -0.3%, -0.7%)
Qld	1.4% (95% CI: 1.1%, 1.7%)
WA	3.8% (95% CI: 3.3%, 4.2%)
SA	Not significant
Tas	Not significant
ACT	9.5% (95% CI: 8.3%, 10.6%)
NT	1.5% (95% CI: 0.5%, 2.5%)

Table C1.3: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change by state or territory of usual residence, Australia, 2001 to 2010

State or territory of usual residence	Annual rate of change
NSW	1.2% (95% CI: 0.7%, 1.6%)
Vic	1.0% (95% CI: 0.5%, 1.5%)
Qld	Not significant
WA	3.0% (95% CI: 2.2%, 3.9%)
SA	Not significant
Tas	2.6% (95% CI: 1.0%, 4.2%)
ACT	4.7% (95% CI: 2.6%, 6.8%)
NT	2.0% (95% CI: 0.3%, 3.8%)

Table C1.4: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change by case type, Australia, 2001 to 2010

Case type	Annual rate of change
Occupant of MV ^(a)	-0.9% (95% CI: -0.6%, -1.2%)
<i>Driver of MV</i>	<i>Not significant</i>
<i>Passenger of MV</i>	-1.2% (95% CI: -0.7%, -1.8%)
Motorcycle rider	5.2% (95% CI: 4.6%, 5.7%)
Pedal cycle rider	7.5% (95% CI: 6.6%, 8.3%)
Pedestrian	-1.0% (95% CI: -0.3%, -1.7%)

(a) Occupants of motor vehicles except motorcyclists.

Table C1.5: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change by case type and state or territory of usual residence, Australia, 2001 to 2010

State or territory of usual residence	Annual rate of change
Driver	
WA	1.8% (95% CI: 0.4%, 3.2%)
SA	-2.4% (95% CI: -3.7%, -1.1%)
Tas	2.8% (95% CI: 0.3%, 5.4%)
Other states/territories	Not significant
Passenger	
NSW	-1.7% (95% CI: -0.6%, -2.7%)
Qld	-2.4% (95% CI: -1.1%, -3.7%)
SA	-3.6% (95% CI: -1.8%, -5.4%)
NT	3.5% (95% CI: 0.3%, 6.7%)
Other states/territories	Not significant
Motorcycle rider	
NSW	6.1% (95% CI: 5.0%, 7.2%)
Vic	3.7% (95% CI: 2.5%, 4.9%)
Qld	3.9% (95% CI: 2.8%, 5.1%)
WA	7.7% (95% CI: 5.7%, 9.6%)
SA	5.3% (95% CI: 3.2%, 7.5%)
Tas	Not significant
ACT	7.4% (95% CI: 2.9%, 12.1%)
NT	8.1% (95% CI: 3.7%, 12.6%)
Pedal cycle rider	
NSW	5.9% (95% CI: 4.4%, 7.5%)
Vic	9.7% (95% CI: 8.0%, 11.3%)
Qld	5.0% (95% CI: 3.2%, 6.8%)
WA	7.3% (95% CI: 4.3%, 10.4%)
SA	9.0% (95% CI: 6.0%, 12.1%)
Tas	9.6% (95% CI: 3.7%, 15.9%)
ACT	16.5% (95% CI: 10.0%, 23.3%)
NT	Not significant
Pedestrian	
Vic	-1.5% (95% CI: -0.2%, -2.8%)
Other states/territories	Not significant

Table C1.6: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change (per 100,000 registered vehicles) by case type and state or territory of usual residence, Australia, 2001 to 2010

Case type	Annual rate of change
NSW	
Occupant of MV	-2.0% (95% CI: -2.6%, -1.4%)
Motorcyclist	Not significant
Vic	
Occupant of MV	-1.3% (95% CI: -1.9%, -0.6%)
Motorcyclist	Not significant
Qld	
Occupant of MV	-3.2% (95% CI: -3.9%, -2.5%)
Motorcyclist	-2.6% (95% CI: -3.7%, -1.5%)
SA	
Occupant of MV	-3.9% (95% CI: -4.9%, -2.9%)
Motorcyclist	Not significant
WA/Tas/ACT/NT	
Occupant of MV	Not significant
Motorcyclist	Not significant
Australia	
Occupant of MV	-2.0% (95% CI: -2.3%, -1.6%)
Motorcyclist	-1.0% (95% CI: -1.5%, -0.4%)

Table C1.7: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change by remoteness area of usual residence, Australia, 2001 to 2010

Remoteness area	Annual rate of change
Major city	1.5% (95% CI: 1.2%, 1.8%)
Inner regional	0.6% (95% CI: 0.1%, 1.1%)
Outer regional	Not significant
Remote	3.7% (95% CI: 2.1%, 5.3%)
Very remote	Not significant

Table C1.8: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change for residents of major cities by state or territory usual residence, Australia, 2001 to 2010

State or territory of usual residence	Annual rate of change
NSW	0.8% (95% CI: 0.3%, 1.4%)
Vic	0.8% (95% CI: 0.2%, 1.3%)
Qld	2.8% (95% CI: 2.0%, 3.6%)
WA	3.4% (95% CI: 2.3%, 4.6%)
SA	Not significant
ACT	4.9% (95% CI: 2.8%, 7.0%)

Table C1.9: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change by age group and sex, Australia, 2001 to 2010

Age group	Annual rate of change
Males	
0–4	–5.4% (95% CI: –8.6%, –2.1%)
5–14	–2.1% (95% CI: –3.4%, –0.8%)
15–24	–1.1% (95% CI: –1.7%, –0.6%)
25–44	1.5% (95% CI: 1.0%, 2.0%)
45–64	5.8% (95% CI: 5.1%, 6.5%)
65+	2.8% (95% CI: 1.9%, 3.8%)
Females	
0–4	–4.2% (95% CI: –7.9%, –0.4%)
5–14	–3.6% (95% CI: –5.5%, –0.4%)
15–24	–1.4% (95% CI: –2.2%, –0.5%)
25–44	Not significant
45–64	Not significant
65+	1.5% (95% CI: 0.6%, 2.5%)

Table C1.10: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change for motor vehicle occupants by age group and sex, Australia, 2001 to 2010

Age group	Annual rate of change
Males	
0–4	Not significant
5–14	Not significant
15–24	–2.5% (95% CI: –3.2%, –1.8%)
25–44	Not significant
45–64	Not significant
65+	Not significant
Females	
0–4	–5.0% (95% CI: –9.4%, –0.4%)
5–14	Not significant
15–24	–2.2% (95% CI: –3.1%, –1.3%)
25–44	–1.4% (95% CI: –2.4%, –0.5%)
45–64	–1.5% (95% CI: –2.5%, –0.4%)
65+	1.9% (95% CI: 0.8%, 3.1%)

Table C1.11: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change for motorcycle riders by age group and sex, Australia, 2001 to 2010

Age group	Annual rate of change
Males	
5–14	Not significant
15–24	Not significant
25–44	3.1% (95% CI: 2.2%, 4.0%)
45–64	13.2% (95% CI: 11.8%, 14.6%)
65+	14.0% (95% CI: 10.0%, 18.1%)
Females	
5–14	Not significant
15–24	5.7% (95% CI: 1.3%, 10.2%)
25–44	4.0% (95% CI: 0.9%, 7.3%)
45–64	10.8% (95% CI: 6.8%, 15.0%)
65+	12.4% (95% CI: 0.4%, 25.9%) ^(a)

(a) This figure should be treated with caution due to the small case counts involved.

Table C1.12: Road vehicle non-traffic crashes – high-threat-to-life injury annual rates of change for motorcycle riders by age group and sex, Australia, 2001 to 2010

Age group	Annual rate of change
Males	
5–14	3.7% (95% CI: 1.5%, 6.0%)
15–24	Not significant
25–44	1.5% (95% CI: 0.3%, 2.7%)
45–64	6.5% (95% CI: 4.48%, 8.8%)
65+	Not significant
Females	
5–14	Not significant
15–24	5.7% (95% CI: 0.5%, 11.1%)
25–44	Not significant
45–64	Not significant
65+	Not significant

Table C1.13: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change for pedal cycle riders by age group and sex, Australia, 2001 to 2010

Age group	Annual rate of change
Males	
5–14	Not significant
15–24	Not significant
25–44	7.0% (95% CI: 5.3%, 8.7%)
45–64	14.1% (95% CI: 12.2%, 15.9%)
65+	12.0% (95% CI: 9.1%, 15.2%)
Females	
5–14	Not significant
15–24	Not significant
25–44	10.9% (95% CI: 7.1%, 14.7%)
45–64	15.7% (95% CI: 10.9%, 20.6%)
65+	Not significant

Table C1.14: Road vehicle non-traffic crashes – high-threat-to-life injury annual rates of change for pedal cycle riders by age group and sex, Australia, 2001 to 2010

Age group	Annual rate of change
Males	
5–14	Not significant
15–24	2.3% (95% CI: 0.2%, 4.6%)
25–44	2.4% (95% CI: 0.2%, 4.7%)
45–64	6.5% (95% CI: 4.1%, 9.1%)
65+	Not significant
Females	
5–14	–5.6% (95% CI: –10.4%, –0.6%)
15–24	Not significant
25–44	Not significant
45–64	Not significant
65+	13.7% (95% CI: 3.4%, 25.0%) ^(a)

(a) This figure should be treated with caution due to the small case counts involved.

Table C1.15: Road vehicle traffic crashes – high-threat-to-life injury annual rates of change for pedestrians by age group and sex, Australia, 2001 to 2010

Age group	Annual rate of change
Males	
0–4	–6.6% (95% CI: –12.0%, –1.0%)
5–14	–6.7% (95% CI: –9.3%, –4.0%)
15–24	Not significant
25–44	Not significant
45–64	Not significant
65+	Not significant
Females	
0–4	Not significant
5–14	–6.2% (95% CI: –9.6%, –2.7%)
15–24	Not significant
25–44	Not significant
45–64	Not significant
65+	Not significant

Table C1.16: Road vehicle non-traffic crashes–high-threat-to-life injury annual rates of change by case type and state or territory of usual residence, Australia, 2001 to 2010

State or territory of usual residence	Annual rate of change
Driver	
Vic	–8.3% (95% CI: –10.6%, –6.0%)
Qld	–4.0% (95% CI: –6.1%, –1.9%)
SA	–5.4% (95% CI: –8.9%, –1.7%)
Other states and territories	Not significant
Passenger	
NSW	–5.8% (95% CI: –8.3%, –3.2%)
Vic	–5.2% (95% CI: –8.2%, –2.1%)
Qld	–6.8% (95% CI: –9.4%, –4.1%)
WA	–7.1% (95% CI: –11.2%, –2.8%)
SA	–11.0% (95% CI: –14.9%, –5.7%)
Tas/ACT/NT	Not significant
Motorcycle rider	
NSW	3.2% (95% CI: 1.9%, 4.5%)
Vic	2.5% (95% CI: 0.9%, 4.1%)
SA	3.4% (95% CI: 0.8%, 6.0%)
Tas	5.8% (95% CI: 0.9%, 10.9%)
NT	6.2% (95% CI: 0.3%, 12.5%)
Qld/WA/ACT	Not significant
Pedal cycle rider	
NSW	3.6% (95% CI: 1.8%, 5.4%)
ACT	13.2% (95% CI: 6.7%, 20.1%)
Other states and territories	Not significant
Pedestrian	
SA	–5.5% (95% CI: –10.5%, –0.1%)
Other states and territories	Not significant

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Related publications

This report, *Trends in serious injury due to road vehicle traffic crashes, Australia 2001 to 2010*, is part of an annual series. The two earlier editions can be downloaded from the AIHW website <www.aihw.gov.au>. The website also includes information on ordering printed copies.

The following AIHW publications relating to serious injury might also be of interest:

AIHW: Berry JG & Harrison J 2007. *Serious injury due to land transport accidents, Australia, 2003–04*. AIHW Cat. no. INJCAT 107. Canberra: AIHW & ATSB.

AIHW: Berry JG & Harrison J 2008. *Serious injury due to land transport accidents, Australia, 2005–06*. Injury research and statistics series number 42. Cat. no. INJCAT 113. Adelaide: AIHW.

AIHW: Henley G & Harrison JE 2009. *Serious injury due to land transport accidents, Australia, 2006–07*. Injury research and statistics series no. 53. Cat. no. INJCAT 129. Canberra: AIHW.

AIHW: Henley G & Harrison JE 2012. *Serious injury due to land transport accidents, Australia, 2007–08*. Injury research and statistics series no. 59. Cat. no. INJCAT 135. Canberra: AIHW.

AIHW: Henley G & Harrison JE 2012. *Serious injury due to land transport accidents, Australia, 2008–09*. Injury research and statistics series no. 67. Cat. no. INJCAT 143. Canberra: AIHW.

This report shows that rates for people seriously injured due to a road traffic crash rose from 141.6 to 146.4 per 100,000 population. Over one-quarter (26%) sustained life-threatening injuries.

Rates of life-threatening injury involving motorcycle riders and pedal cycle riders rose significantly over this period, while rates involving passengers of motor vehicles and pedestrians fell.