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Injury of Aboriginal and Torres Strait Islander people due to transport

2010–11 to 2014–15

AIHW

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Injury of Aboriginal and Torres Strait Islander people due to transport

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Contents

Summary

This report provides a summary of fatal and non-fatal injury of Aboriginal and Torres Strait Islander people in Australia due to unintentional land transport crashes over the 5-year period from 2010–11 to 2014–15. Due to data quality issues, Victoria, Tasmania and the Australian Capital Territory were excluded from analyses.

All transport injury

Transport-related injury was the second leading cause of fatal injury (23%) and the fourth leading cause of serious injury (8.2%) for Aboriginal and Torres Strait Islander people. Over 95% of the fatal and non-fatal transport injury cases for Aboriginal and Torres Strait Islander people involved land transport.

Land transport injury

Land transport crashes accounted for 19% of all fatal injury cases and 8% of all hospitalised injury cases for Aboriginal and Torres Strait Islander people. The age-standardised rate for Aboriginal and Torres Strait Islander people was 2.7 times the rate for non-Indigenous Australians for fatal cases and 1.3 times the rate for non-Indigenous Australians for serious injuries. Over 90% of Aboriginal and Torres Strait Islander land transport fatalities and about 66% of serious injury cases occurred in traffic.

Aboriginal and Torres Strait Islander people who were fatally or seriously injured in land transport crashes were less likely to have been drivers and more likely to have been passengers and pedestrians, compared with non-Indigenous Australians. Sixty-three per cent of Aboriginal and Torres Strait Islander people fatally injured in land transport crashes, and 39% of those seriously injured, were occupants of cars.

The age-standardised fatal injury rate for Aboriginal and Torres Strait Islander people as car occupants was 3.1 times that of non-Indigenous Australians (driver 2.5 times; passenger 4.8 times) and the fatal injury rate for Aboriginal and Torres Strait Islander people as pedestrians was 4.6 times that of non-Indigenous Australians. Equivalent ratios for serious injury were 1.2 (for car drivers), 2.5 (for passengers) and 2.9 (for pedestrians).

In general, age-standardised rates of fatal and serious land transport injury increased with the remoteness of the person's usual residence from an urban centre.

Fatal injury rates for Aboriginal and Torres Strait Islander people were higher than those for non-Indigenous Australians for residents of all remoteness areas, while serious injury rates for non-Indigenous Australians were higher than those for Aboriginal and Torres Strait Islander people in all remoteness regions except *Major cities*.

Overall, age-standardised fatal and serious injury rates for Aboriginal and Torres Strait Islander people and for non-Indigenous Australians did not change significantly over the 5-year period from 2010–11 to 2014–15. However, there were statistically significant declines in fatal injury rates for non-Indigenous Australians injured as car passengers or as pedestrians over this period.

1 Introduction

Transport crashes are a leading cause of injury, both fatal and non-fatal. This is the fifth in a series of reports that provide an overview of fatal and serious non-fatal injury of Aboriginal and Torres Strait Islander people sustained in transport crashes in Australia. This edition includes cases that occurred in the period 1 July 2010 to 30 June 2015. The previous edition included cases in the 5 years to 30 June 2010. (See Related publications for a list of the previous editions.)

The main focus of the report is unintentional injury due to land transport. Section 2 has wider scope, putting land transport injury in the context of all causes of injury and of injury due to all types of transport.

For the sake of brevity, the word 'Indigenous' is sometimes used in place of 'Aboriginal and Torres Strait Islander' in this report, particularly in tables and figures and their captions. People identified as non-Indigenous are referred to as 'non-Indigenous Australians'. The focus of this report is on comparisons between Indigenous and non-Indigenous Australians and analyses exclude individuals whose Indigenous status was not stated.

Data sources and scope

Data for this report are extracted from nationally held databases. Data on fatal cases are from the AIHW National Mortality Database (NMD), which contains data assembled and cause-coded by the Australian Bureau of Statistics (ABS) on the basis of information from Registries of Births, Deaths and Marriages and from the coronial system in each state and territory, while data on non-fatal cases are from the AIHW National Hospital Morbidity Database, which includes records of nearly all episodes in which a person was admitted to hospital in Australia. Details of the criteria used to select records from these sources are provided in Appendix A. In this report, the term *serious injury* refers to an injury which resulted in the person being admitted to hospital and subsequently discharged alive, either on the same day or after 1 or more nights' stay in a hospital bed. Deaths in hospital are excluded from the serious injury data, and are captured in the NMD.

Ideally, the report would cover the whole of Australia. However, the quality of the identification of Indigenous people in the main mortality data source on which this work depends varies between jurisdictions and is considered to be insufficient for reporting in some parts of Australia in the period covered by this report. Accordingly, the geographic scope of the report for fatal injury relies on mortality data from New South Wales, Queensland, Western Australia, South Australia and the Northern Territory to provide indicative national information for Aboriginal and Torres Strait Islander people (AIHW 2014). As in previous reports in the series, the *Place of usual residence* variables in the case data sources were used to apply this restriction. In order to allow meaningful comparisons between fatal and non-fatal injury, the same geographic scope has been applied to serious injury cases.

Based on the 2011 Census, the excluded jurisdictions account for almost 12% of the national Indigenous population. The excluded jurisdictions also account for 7% of identified Indigenous land transport deaths and 9% of identified Indigenous land transport serious injury cases. Crude rates are similar for Australia as a whole and for the 5-jurisdiction sub-national region that has been included—both overall, and by remoteness area. (See Appendix A Data issues for further information and Appendix C for estimates based on data from all jurisdictions.)

The data, as presented, are likely to underestimate transport-related fatal and serious injury rates of Aboriginal and Torres Strait Islander people, due to the incomplete identification of Aboriginal and Torres Strait Islander people in hospital and deaths data collections. Under-ascertainment of Aboriginal and Torres Strait Islander people is expected to result in over-estimated counts of fatal and non-fatal injury for non-Indigenous Australians, because some people who could correctly be recorded as Indigenous will in fact have been recorded as *Non-Indigenous* or *Not stated* (see Appendix A). The effect of this on rates for non-Indigenous Australians will be small overall, because Aboriginal and Torres Strait Islander people comprise a small proportion of the population of Australia, but could be larger for remote areas, where Indigenous people make up a larger proportion of the population.

Due to small annual numbers of some case types warranting attention, fatal injury data for the 5 jurisdictions listed above have been combined for the 5-year observational period from 2010–11 to 2014–15, except in the section that presents trends in rates-per-year for broad types of cases.

Case counts for the study period are the number of cases that occurred in the 5-year period from 1 July 2010 to 30 June 2015. The denominators used to calculate rates for the whole study period are the sum of the relevant estimated population at the mid-point of each of the 5 years from 2010–11 to 2014–15. All rates have been age-standardised unless they are age-specific or stated to be crude rates.

Confidence intervals around estimates are provided in some tables and figures, to show variability due to small case counts. Confidence intervals are also provided for the model-based estimates of trends in annual rates. In both instances, variation can be large when case numbers are small. Further information on data and methods is provided in Appendix A.

2 Injury due to transport

Transport injury, as defined here, includes unintentional (or accidental) injury related to transport and does not include transport-related injury recorded as being due to *Intentional self-harm* or *Assault*, or where intent remained undetermined. For a summary of terms related to transport injury, see Box 2.1.

Unintentional injury related to transport crashes was the second leading cause of fatal injury for Aboriginal and Torres Strait Islander people (23% of injury deaths), following *Suicide* (35%), with *Unintentional poisoning by pharmaceuticals* being the third leading cause (12%) (Table 4.1.1). Transport was the fourth leading cause of serious injury for Aboriginal and Torres Strait Islander people (Table 4.1.1). *Assault* was the leading cause of serious injury for Aboriginal and Torres Strait Islander people (23%), followed by *Unintentional falls* (19%) and *Complications of surgical and medical care* (12%).

The age-standardised rate for fatal transport injury for Aboriginal and Torres Strait Islander people of 15.9 cases per 100,000 was 2.7 times as high as the corresponding rate for non-Indigenous cases, while the age-standardised rate for serious transport injury for Aboriginal and Torres Strait Islander people of 300 cases per 100,000 was 1.3 times as high as the corresponding rate for non-Indigenous cases (Table 4.1.1).

Land transport injury is the subject of this report, except for the present chapter, which has wider scope. Over 95% of fatal and non-fatal transport injury cases for Aboriginal and Torres Strait Islander people involved land transport.

Water transport and air transport accounted for 1.6 % and 0.9%, respectively, of fatal transport injury cases for Aboriginal and Torres Strait Islander people and for less than 1% of transport-related serious injury (tables 4.1.2 and 4.1.3).

For Aboriginal and Torres Strait Islander people, traffic cases were much more frequent than non-traffic cases, if the mode of transport at the time of fatal injury was a car, motorcycle or being a pedestrian (Table 4.1.2). For non-Indigenous Australians, traffic cases were much more frequent than non-traffic cases if the mode of transport at the time of fatal injury was a car, motorcycle, pedal cycle or being a pedestrian.

Car occupants were prominent among fatal transport injury cases, accounting for over 61% of-transport injury deaths of Aboriginal and Torres Strait Islander people and almost half of transport injury deaths of non-Indigenous Australians (Table 4.1.2). Cars were also the most common mode of transport when serious injury occurred, both for Aboriginal and Torres Strait Islander people (39%) and for non-Indigenous Australians (32%) (Table 4.1.3). Fatally injured Aboriginal and Torres Strait Islander people were more likely than non-Indigenous Australians to have been pedestrians at the time of injury and less likely to have been motorcyclists.

Considered in terms of age-standardised rates of transport injury, Aboriginal and Torres Strait Islander people were more than 3 times as likely as non-Indigenous Australians to be fatally injured as a car occupant and 4.6 times as likely as non-Indigenous Australians to be fatally injured as a pedestrian (Table 4.1.2).

Box 2.1: Summary of terms related to transport injury

The way in which a person was travelling when injured (for example, in a car, on a bicycle, riding a horse' walking, travelling in a watercraft) is referred to as their **mode of transport**, in keeping with the International Classification of Diseases (ICD). Cars, other motor vehicles, pedal cycles and being a pedestrian are the modes involved in the great majority of transport injury cases. These modes, together with rail and certain special types of vehicles, are referred to as **land transport**.

Water transport and **air transport** are the main modes of transport that are not land transport.

Land transport cases that involved at least 1 vehicle, and occurred at least partly on a road accessible to the public, are referred to as **traffic** cases, in keeping with the ICD. **Non-traffic** cases involved at least 1 vehicle and occurred entirely off-road. Traffic and non-traffic cases are distinguished for the most frequently reported modes of transport (tables 4.1.2 and 4.1.3).

3 Injury due to land transport

This chapter examines the fatal and non-fatal injury of Aboriginal and Torres Strait Islander people due to land transport. Box 3.1 summarises cases included in this chapter of the report.

Box 3.1: Inclusion criteria for Chapter 3

Chapter 3 includes cases of **unintentional injury** where the person was, when injured, a pedestrian or was being conveyed by a pedal cycle; motor cycle or 3-wheeled motor vehicle; car; bus; light- or heavy-goods vehicle; tram; train; animal or animal-drawn vehicle; special vehicle used in agriculture, industry or construction; a special all-terrain vehicle or an unknown means of land transport. It includes **traffic cases** (those occurring at least partly on a public road), **non-traffic** cases and cases unspecified as to whether they were traffic or non-traffic. It includes occupants of vehicles, as well as persons on the outside and persons boarding or alighting from vehicles. Cases of injury involving land transport which had been coded as due to *Intentional self-harm* or *Assault,* and those coded as having *Undetermined intent* were excluded. Cases where a medical event (for example, heart attack) occurred prior to a land transport crash were excluded unless the *Underlying cause of death* (UCoD) code was in the ICD-10 range V01–V89 (that is, land transport).

Land transport injuries make up over 97% of all fatal and serious transport injuries of Aboriginal and Torres Strait Islander people. Hence, overall rates of land transport injury (Table 4.2.1) are similar to the rates of transport injury. Ratios of the age-standardised rates of land transport injury for Aboriginal and Torres Strait Islander people to the rates for non-Indigenous Australians are almost the same as those for all land transport: 2.7 for fatal cases and 1.3 for serious injuries (Table 4.2.2).

Over 90% of Aboriginal and Torres Strait Islander land transport fatalities occurred in traffic, as did about 66% of serious injury cases (Table 4.2.1). The mean length of stay in hospital for Aboriginal and Torres Strait Islander people was 1.7 times as long for serious injuries that occurred in traffic (5.3 days) as for non-traffic cases (3.2 days).

Age and sex distribution

Land transport fatal and serious injury rates differed by age group and by sex for both Aboriginal and Torres Strait Islander people and non-Indigenous Australians (Table 4.2.2 and Figure 4.2.1).

Fatal injury rates for Aboriginal and Torres Strait Islander males were higher for each successive age group, from 10–14 through to early middle age (ages 35–39). Rates for Aboriginal and Torres Strait Islander males were consistently 2–5 times the rates for non-Indigenous males. A similar pattern was observed for females, despite a sharp peak in rates for Aboriginal and Torres Strait Islander females aged 60–64.

Compared with fatal cases, age-specific rates of serious injury of Aboriginal and Torres Strait Islander people were more similar to the rates for non-Indigenous Australians, though higher at most ages. The difference in rates was greatest in children aged 0–4 and in the age range 25–29 to 35–39. Serious injury rates were highest for those aged 15–19 for Aboriginal and Torres Strait Islander males and females and for non-Indigenous Australians of both sexes (Figure 4.2.1).

The number of cases underlying some age-specific rates of fatal injury is low, particularly for Aboriginal and Torres Strait Islander males and females in the youngest and oldest age groups. It should be expected that these rates would differ from period to period due to fluctuation that occur with small case numbers.

Mode of transport

Car occupant (63%) and pedestrian (24%) were the 2 modes of land transport associated with the largest number of fatal land transport injuries for Aboriginal and Torres Strait Islander people (Table 4.2.3). Car occupant (54%) was also the type associated with the largest number of serious injuries.

The rates of fatal and serious injury of Aboriginal and Torres Strait Islander people as car occupants were, respectively, 3.1 times and 1.7 times the rates for non-Indigenous Australians (Table 4.2.3). The fatality rate for Aboriginal and Torres Strait Islander people as a car driver (5.3 deaths per 100,000 population per year) was broadly similar to the fatality rate as a car passenger (4.0 deaths per 100,000 population per year). In contrast, the fatality rate as a car driver for non-Indigenous Australians was 2.5 times the rate as a car passenger. A similar pattern was observed for serious injury. The rate of fatal injury as a pedestrian was 4.6 times as high for Aboriginal and Torres Strait Islander people as for non-Indigenous Australians, while the rate of serious injury as a pedestrian was almost 3 times as high for Aboriginal and Torres Strait Islander people.

Figures 4.2.2 and 4.2.3 show age and sex specific rates of serious injury in traffic, by Indigenous status, for the 5 most numerous types of serious injury cases reported in Table 4.2.3: car drivers, car passengers, pedestrians, motorcyclists and pedal cyclists. Rates of serious injury for car passengers and pedestrians were markedly higher for Aboriginal and Torres Strait Islander people than for non-Indigenous Australians, across most age groups.

Figure 4.2.4 provides similar information on male non-traffic cases. For the case types presented, the pattern of age-specific rates of non-traffic serious injury for Aboriginal and Torres Strait Islander males was similar to that for non-Indigenous Australian males. Rates were highest in both groups for pedal cyclist cases at ages 10–14 and for motorcyclist cases at ages 15–19.

An equivalent figure showing age-specific rates of non-traffic serious injury for Aboriginal and Torres Strait Islander females was not presented due to small case numbers.

All charts in figures 4.2.2 to 4.2.4 have the same vertical scale, to aid comparison. Tables of the rates shown in these figures are provided in Appendix B.

Remoteness areas

The data sets used to provide case data for this report do not contain information on the location of crashes. The data are reported, instead, by the remoteness area of the injured person's usual residence.

Major cities were the place of usual residence for 13% of Aboriginal and Torres Strait Islander people with a fatal land transport injury and 28% of those with a serious injury, while almost half (47%) of non-Indigenous Australians with a fatal land transport injury lived in *Major cities* (Table 4.2.4). Conversely, nearly half of fatally injured Aboriginal and Torres Strait Islander people lived in a *Remote* or *Very remote* area. By comparison, only 6% of non-Indigenous Australians with fatal land transport injury and 4% with serious land transport injury lived in *Remote* or *Very remote* areas.

Age-standardised rates of fatal and serious land transport injury generally increased with the remoteness of the person's usual residence from an urban centre, both for Aboriginal and Torres Strait Islander people and for non-Indigenous Australians and for both sexes. (Table 4.2.5 and Figure 4.2.5). An exception to this pattern is that, for Aboriginal and Torres Strait Islander females and non-Indigenous males, rates of fatal injury for residents of the *Very remote* areas were lower than rates for residents of *Remote* areas. In addition, serious injury rates for both Aboriginal and Torres Strait Islander males and females were lower for *Very remote* areas, when compared with *Remote* areas.

The rate of fatal land transport injury rate for Aboriginal and Torres Strait Islander people who lived in each remoteness area was higher than the rate for non-Indigenous Australians who lived in the same remoteness area (Table 4.2.5 and Figure 4.2.5). Rates for Aboriginal and Torres Strait Islander people were around double those of non-Indigenous Australians for the *Remote* and *Very remote* areas, while differences between the groups were smaller for the less-remote areas. The overall rate of fatal land transport injury for Aboriginal and Torres Strait Islander people was 2.7 times that for non-Indigenous Australians.

Age-standardised rates of serious injury were lower for Aboriginal and Torres Strait Islander people than for non-Indigenous Australians among the residents of every remoteness area except *Major cities,* where the rate for Aboriginal and Torres Strait Islander people was about 1.2 times that of non-Indigenous Australians (Table 4.2.5 and Figure 4.2.5). The overall rate of serious land transport injury for Aboriginal and Torres Strait Islander people was about 1.3 times that for non-Indigenous Australians.

In summary, the ratio of the rate for Aboriginal and Torres Strait Islander people to the rate for non-Indigenous Australians was larger, overall, than in any of the remoteness areas, for both fatal and serious injury cases. This results from 2 factors. First, rates of fatal and serious land transport injury were higher for residents of more remote areas, for both Aboriginal and Torres Strait Islander people and non-Indigenous Australians. Second, a much larger proportion of Aboriginal and Torres Strait Islander people (23%) than of non-Indigenous Australians (2.3%) lived in the *Remote* and *Very remote* areas where the transport injury rates were highest.

Traffic and non-traffic cases

The number of fatal cases in some remoteness areas was small, precluding a detailed examination of land transport deaths by remoteness area. Analysis comparing traffic and non-traffic cases is therefore restricted to serious injury (Table 4.2.6 and Figure 4.2.6).

Considering serious injuries that occurred in traffic, rates for Aboriginal and Torres Strait Islander males were broadly similar to rates for non-Indigenous males in *Inner* and *Outer regional* areas and higher than rates for non-Indigenous males in the other remoteness zones, most markedly for *Major cities* and *Remote* areas. Rates for Aboriginal and Torres Strait Islander females were broadly similar to rates for non-Indigenous females in all remoteness areas except for *Remote* areas, where rates for Aboriginal and Torres Strait Islander females were markedly higher (Table 4.2.6).

In contrast, rates of non-traffic serious injury were lower for Aboriginal and Torres Strait Islander people than for non-Indigenous Australians in all remoteness areas except for *Major cities,* where rates were similar. The differences in rates between the 2 groups tended to increase with remoteness, rising to more than 3-fold for residents of *Very remote* areas (Table 4.2.6).

As shown in Table 4.2.1, there was essentially no difference between the overall age-standardised rate of non-traffic serious injury for Aboriginal and Torres Strait Islander

people and the equivalent rate for non-Indigenous Australians. As explained above, this pattern occurs because firstly, rates rose with remoteness, and secondly, a much larger proportion of Aboriginal and Torres Strait Islander people than non-Indigenous Australians lived in the more remote areas, where rates were highest.

Mode of transport, age and sex

Figures 4.2.7 to 4.2.12 show similar information on serious land transport injury to that shown in figures 4.2.2 and 4.2.3, except that traffic and non-traffic cases are combined and each pair of figures presents data for the residents of a remoteness area: *Major cities* (figures 4.2.7 and 4.2.8), *Inner and outer regional* areas (figures 4.2.9 and 4.2.10) and *Remote and very remote* areas (figures 4.2.11 and 4.2.12). The *Inner* and *Outer Regional* areas were combined, as were the *Remote* and *Very remote* areas, because of small case numbers in some groups. To aid comparisons, the vertical axes of the charts in this group were set to a maximum of 300 cases per 100,000, except for males in *Regional and remote* areas whose higher rates required a maximum of 500.

Patterns of injury rates were broadly similar between the remoteness areas, though with these differences:

- rates tended to rise with remoteness
- patterns of rates for Aboriginal and Torres Strait Islander people were most similar to those for non-Indigenous Australians in *Major cities*, and most different for the combined *Remote* and *Very remote* areas. Notable in the *Remote* and *Very remote* areas were the high rates of injury of Aboriginal and Torres Strait Islander people as car passengers, and the high rates of injury of non-Indigenous Australians due to motorcycle crashes. Rates for pedestrians were markedly higher for Aboriginal and Torres Strait Islander people than for non-Indigenous Australians across all remoteness areas, the largest differences being in *Remote* areas
- in all remoteness areas, Aboriginal and Torres Strait Islander rates of injury as pedestrians were generally higher for those aged 20–24 or over than in younger age groups. In contrast, rates of injury as pedestrians were comparatively low across all age groups for non-Indigenous Australians.

Mechanism of injury

Many land transport injuries result from a collision between the vehicle in which a person is travelling and another vehicle or another object, or a collision between a pedestrian and a vehicle. In this report, following usual practice, the other vehicle or object is called the *counterpart*. The combination of the injured person's mode of transport and the counterpart is referred to here as the *mechanism of injury*.

Some vehicle crashes do not involve a well-defined counterpart (for example, a car rolls over but does not strike another vehicle or a fixed object). These cases are included as *Non-collision transport crashes*. The counterparts in land transport crashes that resulted in the death or serious injury of Aboriginal and Torres Strait Islander people are summarised in tables 4.2.7 and 4.2.8.

For Aboriginal and Torres Strait Islander people with fatal land transport injuries sustained in traffic, the most common mechanism of injury was as the occupant of a car in a non-collision crash (26%), while for non-traffic, the most common mechanism of injury was as a pedestrian injured in a collision with a car, pick-up truck or van (43%) (Table 4.2.9). For non-Indigenous Australians, the most common mechanism of injury sustaining a fatal injury in traffic was as an

occupant of a car in a collision with a fixed or stationary object (23%), while for non-traffic the most common mechanism resulting in fatal injury was as a pedestrian injured in a collision with a car, pick-up truck or van (20%).

Other frequent mechanisms resulting in fatal traffic injury of Aboriginal and Torres Strait Islander people were as an occupant of a car in a collision with a fixed or stationary object (23%) and as a pedestrian in collision with a car, pickup-truck or van (17%).

The mechanism resulting in the largest number of serious injuries of Aboriginal and Torres Strait Islander people in traffic conditions were as the occupant of a car in a non-collision transport crash (21%) while for non-traffic, the most common mechanism of injury was as a motorcyclist injured in a non-collision transport crash (29%). For non-Indigenous Australians, the most common mechanism resulting in serious injury in traffic was as an occupant of a car in a collision with a car, pick-up truck of van (24%), while for non-traffic the most common mechanism resulting in serious injury was as a motorcyclist injured in a non-collision transport accident (32%).

The ICD-10 classification distinguishes several roles of vehicle occupants, the most common being driver and passenger. The numbers of cases involving each combination of type of counterpart and role of car occupant are presented for fatal cases (Table 4.2.10) and serious injury cases (Table 4.2.11). Considering fatal cases, 96% of Aboriginal and Torres Strait Islander car occupants and the same proportion of non-Indigenous Australian car occupants were drivers or passengers. The equivalent proportions were lower for serious injury cases (88% and 90%, respectively). Car occupants that were not specified as a driver or passenger consisted of persons on the outside of a vehicle, persons boarding of alighting from a vehicle or where it was not known whether the person was a driver or a passenger.

However, the relative number of drivers and passengers differed between the groups. Of Aboriginal and Torres Strait Islander people fatally injured as car occupants, there were broadly similar numbers of passengers and drivers. In contrast, 2.7 times as many non-Indigenous Australians fatally injured as car occupants were drivers as were passengers. A similar pattern was observed for serious injury cases. The higher proportion of car passengers relative to car drivers among Aboriginal and Torres Strait Islander people fatally or seriously injured as car occupants suggests a higher average number of occupants per vehicle in which such cases occurred, compared with accidents involving non-Indigenous Australians.

Time trends

Rates of fatal land transport injury for both Aboriginal and Torres Strait Islander people and non-Indigenous Australians did not change significantly over the 5-year period from 2010–11 to 2014–15 (Table 4.2.12 and Figure 4.2.13).

As with fatal injury, rates of serious land transport injury for both Aboriginal and Torres Strait Islander people and non-Indigenous Australians did not change significantly over this 5-year period (Table 4.2.12 and Figure 4.2.13). However, rates for Aboriginal and Torres Strait Islander females increased over the 5-year period at an estimated annual rate of 6.9% (95% CI: 0.5%, 13.6%). Despite increasing from 353 to 426 serious injuries per 100,000 population between 2010–11 and 2012–13, rates for Aboriginal and Torres Strait Islander males did not change significantly over the 5-year period of interest.

For fatally injured Aboriginal and Torres Strait Islander people, no statistically significant changes in rates over the 5-year period were found for any of the road user groups assessed. Rates for non-Indigenous Australians fatally injured as pedestrians and as car passengers

declined, at estimated rates of 14.6% (95% CI: 6.0, 22.4) and 10.4% (95% CI: 1.6, 18.4) per year, respectively (Figure 4.2.14).

Rates of serious land transport injury for both Aboriginal and Torres Strait Islander people and non-Indigenous Australians did not change significantly for any of the road user groups assessed over the 5-year period from 2010–11 to 2014–15 for (Figure 4.2.15). This was despite an increase from 43.8 to 66.3 in serious injuries per 100,000 population between 2010–11 and 2013–14 for Aboriginal and Torres Strait Islander people seriously injured while riding a motorcycle.

Trend results must be interpreted with caution as it is possible that trends in fatal or serious injury rates for Aboriginal and Torres Strait Islander people may be influenced by changing levels of ascertainment of Indigenous status or fatal injury over time. This issue is discussed in Appendix A. The interpretability of trends can also be influenced by changes in hospital admission practices and in the effects of treatment on survival. Trends are only presented for broad types of cases, due to relatively small numbers of cases for Aboriginal and Torres Strait Islander people. Small case numbers also result in wide confidence intervals around modelled trend estimates, especially for fatal cases.

4 Tables and charts

4.1 Injury of Aboriginal and Torres Strait Islander people due to transport, 2010–11 to 2014–15

Table 4.1.1: Fatal and serious injury by Indigenous status, by external causes, 2010–11 to 2014–15

	Fatal injury						Serious injury[a]					
	Indigenous Australians			Non-Indigenous Australians			Indigenous Australians			Non-Indigenous Australians		
External cause of injury	Count	%	Rate[b]	Count	%	Rate[b]	Count	%	Rate[b]	Count	%	Rate[b]
Unintentional												
Transport	433	22.6	15.9	4,907	15.7	6.1	9,495	8.2	299.8	185,823	9.9	238.8
Drowning and immersion	49	2.6	1.5	682	2.2	0.8	138	0.1	3.1	1,856	0.1	2.4
Poisoning, pharmaceuticals	228	11.9	9.7	3,330	10.7	4.3	2,039	1.8	74.4	25,685	1.4	32.1
Poisoning, other substances	33	1.7	1.4	309	1.0	0.4	524	0.5	14.8	7,101	0.4	9.1
Falls	101	5.3	7.9	8,406	27.0	9.2	22,340	19.2	907.6	620,148	33.0	732.3
Fires/burns/ scalds	20	1.0	0.7	228	0.7	0.3	2,367	2.0	70.3	19,812	1.1	25.5
Other unintentional	100	5.2	4.1	1,966	6.3	2.3	27,745	23.9	902.4	498,004	26.5	635.2
Intentional												
Self-inflicted	668	34.8	22.9	8,975	28.8	11.2	8,587	7.4	294.4	91,213	4.9	119.2
Assault	206	10.7	7.2	765	2.5	1.0	26,783	23.0	957.8	54,637	2.9	71.2
Undetermined intent	56	2.9	2.1	752	2.4	0.9	1,793	1.5	64.4	13,268	0.7	17.1
Complications of surgical and medical care	24	1.3	1.6	851	2.7	0.9	14,416	12.4	702.7	357,725	19.0	423.9
No external cause	. .	. .	. .	. .	. .	. .	98	0.1	3.3	2,744	0.1	3.3
Total	**1,918**	**100.0**	**75.0**	**31,171**	**100.0**	**37.4**	**116,325**	**100.0**	**4,295.8**	**1,878,016**	**100.0**	**2,310.1**

. . Not applicable

(a) The number of persons seriously injured was estimated by omitting records involving transfers from other acute-care hospitals.

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

Notes

1. In total, there were 216,371 hospitalisations (10,898 for Indigenous Australians and 205,473 for non-Indigenous Australians) to hospital for transport injury and an estimated 196,328 cases (9,553 Indigenous Australians and 186,775 non-Indigenous Australians), of whom 1,010 persons (58 Indigenous Australians and 952 non-Indigenous Australians) died while in hospital (0.5%). These deaths should be represented in the national mortality data collection and thus are omitted from the serious injury counts in this table and throughout the report.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
3. Column percentages may not sum to exactly 100% due to rounding.

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Table 4.1.2: Mode of transport for transport-related fatal injury by Indigenous status, 2010–11 to 2014–15

	Indigenous			Non-Indigenous			Rate
Mode of transport	**Count**	**%**	**Rate[a]**	**Count**	**%**	**Rate[a]**	**ratio[b]**
Car occupant[c]	266	61.4	9.5	2,449	49.9	3.1	3.1
Traffic[d]	*258*	*59.6*	*9.2*	*2,381*	*48.5*	*3.0*	*3.1*
Non-traffic[e]	*6*	*1.4*	*0.2*	*56*	*1.1*	*0.1*	*3.0*
Motorcyclist	25	5.8	0.9	792	16.1	1.0	0.9
Traffic[d]	*21*	*4.8*	*0.8*	*724*	*14.8*	*0.9*	*0.8*
Non-traffic[e]	*4*	*0.9*	*0.1*	*64*	*1.3*	*0.1*	*1.4*
Pedal cyclist	4	0.9	0.1	140	2.9	0.2	0.5
Traffic[d]	*3*	*0.7*	*0.1*	*124*	*2.5*	*0.2*	*0.4*
Non-traffic[e]	*1*	*0.2*	*0.0*	*15*	*0.3*	*0.0*	*1.1*
Pedestrian	101	23.3	3.8	689	14.0	0.8	4.6
Traffic[d]	*84*	*19.4*	*3.3*	*468*	*9.5*	*0.6*	*5.8*
Non-traffic[e]	*15*	*3.5*	*0.5*	*204*	*4.2*	*0.2*	*1.9*
Occupant of pick-up truck or van	4	0.9	0.3	28	0.6	0.0	9.0
Occupant of heavy transport vehicle	3	0.7	0.1	115	2.3	0.1	0.6
Bus occupant	0	0.0	0.0	6	0.1	0.0	0.0
Animal rider or occupant of animal-drawn vehicle	0	0.0	0.0	32	0.7	0.4	0.0
Occupant of special all-terrain or off-road vehicle	4	0.9	0.1	53	1.1	0.1	1.9
Occupant of 3-wheeled motor vehicle	2	0.5	0.2	11	0.2	0.0	11.9
Occupant of tram	0	0.0	0.0	0	0.0	0.0	0.0
Occupant of train	0	0.0	0.0	4	0.1	0.0	0.0
Occupant of special industrial vehicle	0	0.0	0.0	18	0.4	0.0	0.0
Occupant of special agricultural vehicle	1	0.2	0.0	47	1.0	0.1	0.8
Occupant of special construction vehicle	0	0.0	0.0	11	0.2	0.0	0.0
Occupant of watercraft	7	1.6	0.3	187	3.8	0.2	1.1
Occupant of aircraft	4	0.9	0.2	144	2.9	0.2	1.2
Other and unspecified	12	2.8	0.4	181	3.7	0.2	2.1
Total	**433**	**100.0**	**15.9**	**4,907**	**100.0**	**6.1**	**2.6**

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

(b) Ratio of age-standardised rate for persons specified as Indigenous, divided by persons specified as non-Indigenous.

(c) 'Mode of transport' is how a person was being conveyed when injured. 'Mode' is the type of vehicle or being a pedestrian.

(d) 'Traffic' refers to cases in which injury was due to a vehicle crash that occurred on a public road, entirely or partly.

(e) 'Non-traffic' refers to case in which injury was due to a vehicle crash that occurred entirely in any place other than a public road.

Notes

1. Mortality data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. Cases that were not specified as traffic or non-traffic are included in the total for each mode of transport. Hence the sum of traffic and non-traffic cases may be less than the total for a mode.
3. Column percentages may not sum to exactly 100% due to rounding.

Source: AIHW National Mortality Database.

Table 4.1.3: Mode of transport for transport-related serious injury by Indigenous status, 2010–11 to 2014–15

Mode of transport	Indigenous			Non-Indigenous			Rate ratio[b]
	Count	%	Rate[a]	Count	%	Rate[a]	
Car occupant[c]	3,675	38.7	124.7	59,560	32.1	74.7	1.7
Traffic[d]	*3,303*	*34.8*	*111.3*	*53,316*	*28.7*	*67.1*	*1.7*
Non-traffic[e]	*267*	*2.8*	*8.8*	*3,877*	*2.1*	*4.9*	*1.8*
Motorcyclist	1,985	20.9	55.9	49,089	26.4	64.4	0.9
Traffic[d]	*1,018*	*10.7*	*30.2*	*28,045*	*15.1*	*36.2*	*0.8*
Non-traffic[e]	*939*	*9.9*	*24.9*	*20,278*	*10.9*	*27.2*	*0.9*
Pedal cyclist	1,314	13.8	34.9	32,620	17.6	43.0	0.8
Traffic[d]	*684*	*7.2*	*20.1*	*18,712*	*10.1*	*24.3*	*0.8*
Non-traffic[e]	*605*	*6.4*	*14.2*	*13,403*	*7.2*	*18.1*	*0.8*
Pedestrian	1,274	13.4	43.0	11,921	6.4	14.9	2.9
Traffic[d]	*924*	*9.7*	*31.8*	*8,194*	*4.4*	*10.3*	*3.1*
Non-traffic[e]	*186*	*2.0*	*5.3*	*2,555*	*1.4*	*3.2*	*1.7*
Occupant of pick-up truck or van	83	0.9	2.5	1,145	0.6	1.5	1.7
Occupant of heavy transport vehicle	73	0.8	3.1	2,565	1.4	3.2	1.0
Bus occupant	61	0.6	3.5	1,927	1.0	2.2	1.6
Animal rider or occupant of animal-drawn vehicle	408	4.3	12.3	12,004	6.5	15.8	0.8
Occupant of special all-terrain or off-road vehicle	247	2.6	6.7	4,664	2.5	6.1	1.1
Occupant of 3-wheeled motor vehicle	6	0.1	0.3	173	0.1	0.2	1.5
Occupant of tram	3	0.0	0.1	82	0.0	0.1	1.3
Occupant of train	16	0.2	0.5	373	0.2	0.4	1.2
Occupant of special industrial vehicle	22	0.2	0.9	529	0.3	0.7	1.3
Occupant of special agricultural vehicle	25	0.3	1.1	915	0.5	1.1	1.0
Occupant of special construction vehicle	6	0.1	0.2	225	0.1	0.3	0.8
Occupant of watercraft	78	0.8	2.6	4,063	2.2	5.1	0.5
Occupant of aircraft	7	0.1	0.3	473	0.3	0.6	0.5
Other and unspecified	212	2.2	7.0	3,495	1.9	4.4	1.6
Total	**9,495**	**100.0**	**299.8**	**185,823**	**100.0**	**238.8**	**1.3**

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

(b) Ratio of age-standardised rate for persons specified as Indigenous, divided by persons specified as non-Indigenous.

(c) 'Mode of transport' is how a person was being conveyed when injured. 'Mode' is the type of vehicle or being a pedestrian.

(d) 'Traffic' refers to cases in which injury was due to a vehicle crash that occurred on a public road, entirely or partly.

(e) 'Non-traffic' refers to case in which injury was due to a vehicle crash that occurred entirely in any place other than a public road.

Notes

1. Morbidity data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. Cases that were not specified as traffic or non-traffic are included in the total for each mode of transport. Hence the sum of traffic and non-traffic cases may be less than the total for a mode.
3. Column percentages may not sum to exactly 100% due to rounding.

Source: AIHW National Hospital Morbidity Database.

4.2 Injury of Aboriginal and Torres Strait Islander people due to land transport, 2010–11 to 2014–15

Table 4.2.1: Key indicators of land transport injury for Indigenous Australians, 2010–11 to 2014–15

Indicator	Indigenous males	Indigenous females	Indigenous Australians		
			Traffic	Non-traffic	Total[a]
Fatal injury					
Deaths	284	138	385	30	422
Percentage of all deaths due to injury[b]	19.5	17.3	17.1	1.3	18.7
Crude rate	18.6	8.9	12.6	1.0	13.8
Adjusted rate[c]	21.6	9.7	14.2	0.9	15.5
Age-standardised rate ratios: Indigenous: Non-Indigenous[d]	2.6	3.3	2.9	1.7	2.7
Serious injury					
Cases[e]	6,399	2,958	6,214	2,336	9,357
Percentage of estimated cases of injury[f]	10.1	5.6	5.3	2.0	8.0
Mean length of stay in hospital (days)[g]	4.7	4.6	5.3	3.2	4.7
Total Patient days	30,381	13,719	33,030	7,365	44,101
Crude rate	420.0	193.1	203.4	76.5	306.2
Adjusted rate[c]	402.0	191.0	203.8	63.4	295.3
Age-standardised rate ratios: Indigenous: Non-Indigenous[d]	1.3	1.3	1.4	1.0	1.3

(a) Includes 7 deaths, 807 cases and 3,706 patient days where it is unspecified as to whether the crash occurred in traffic or non-traffic conditions.

(b) Cases with *Underlying cause of death* in the range V01–V89, divided by cases with *Underlying cause of death* in the range V01–Y98 or *Multiple cause of death* in the range S00–T98.

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

(d) Ratio of age-standardised rate for persons specified as Indigenous, divided by persons specified as non-Indigenous.

(e) Includes 3,103 cases (*m* = 2,043; *f* = 1,060) where the person was admitted and discharged on the same day. Excludes records involving transfers from other acute-care hospitals.

(f) Cases with *Principal diagnosis* in the range S00–T98 and *First external cause* code in the range V00–V89, divided by all cases with *Principal diagnosis* in the range S00–T98.

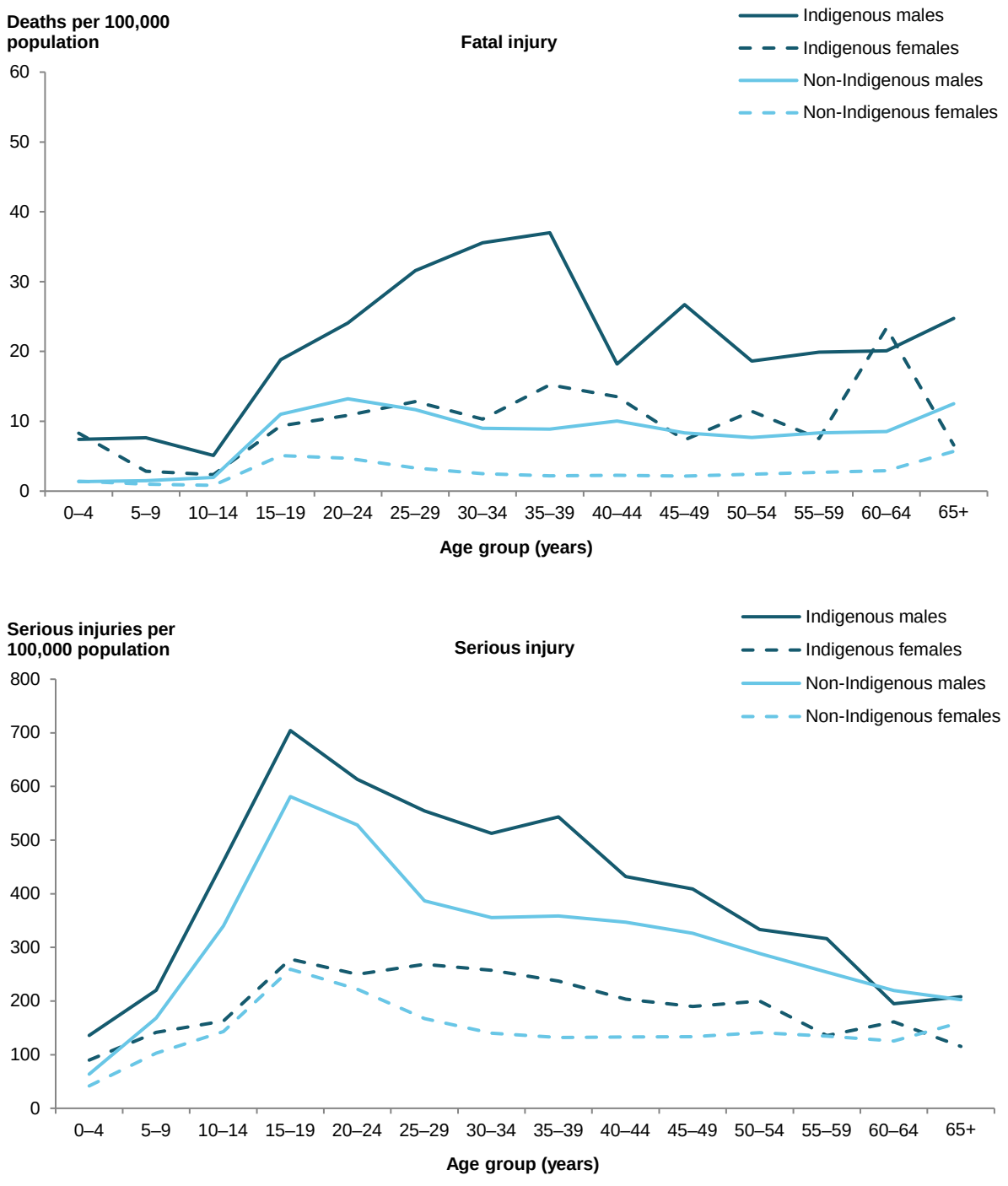
(g) The average number of days a person stayed in hospital with serious transport injury. Denominator includes bed-days for inward transfers.

Notes

1. In total, there were 209,704 hospitalisations (10,739 Indigenous Australians and 198,965 non-Indigenous Australians) for land transport injury for an estimated 190,320 cases (9,414 Indigenous Australians and 180,906 non-Indigenous Australians), of which 996 persons (57 Indigenous Australians and 939 non-Idigenous Australians) died while in hospital (0.5%). These deaths are represented in the national mortality data collection, and are therefore omitted from the serious injury case counts in this table and throughout the report. The estimate of total patient days excludes separations in which the person died in hospital.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Figure 4.2.1: Age-specific rates of fatal and serious land transport injury, by Indigenous status, by sex, 2010–11 to 2014–15



Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Hospital Morbidity Database; AIHW National Mortality Database.

Table 4.2.2: Age-specific and age-standardised rates due to fatal and serious land transport injury, 2010–11 to 2014–15

Indicator	Age group														All ages (crude)	All ages (age std[(a)])
	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65+		
Fatal injury																
Indigenous males	7.4	7.6	5.1	18.8	24.1	31.6	35.6	37.0	18.2	26.7	18.6	19.9	20.1	24.7	18.6	21.6
Non-Indigenous males	1.4	1.5	1.9	11.0	13.2	11.7	9.0	8.9	10.1	8.3	7.7	8.3	8.5	12.5	8.6	8.4
Male rate ratio: Indigenous: Non-Indigenous	5.5	5.1	2.6	1.7	1.8	2.7	4.0	4.2	1.8	3.2	2.4	2.4	2.4	2.0	2.2	2.6
Indigenous females	8.3	2.8	2.4	9.3	10.9	12.8	10.3	15.2	13.5	7.3	11.4	7.5	23.4	6.6	8.9	9.7
Non-Indigenous females	1.4	1.0	0.8	5.1	4.7	3.3	2.5	2.2	2.3	2.2	2.4	2.7	2.9	5.7	3.1	3.0
Female rate ratio: Indigenous: Non-Indigenous	5.8	2.9	2.8	1.8	2.3	3.9	4.1	7.0	5.9	3.4	4.7	2.8	8.0	1.2	2.9	3.3
Rate ratio: Indigenous: Non-Indigenous	5.6	4.3	2.7	1.7	1.9	2.9	4.0	4.7	2.6	3.2	3.0	2.5	3.8	1.7	2.4	2.7
Serious injury																
Indigenous males	135.9	220.0	460.7	704.3	613.2	554.2	512.5	543.5	432.0	408.8	333.5	316.2	195.1	208.2	420.0	402.0
Non-Indigenous males	63.7	168.0	339.9	581.1	528.0	386.7	355.6	358.7	347.2	326.4	288.6	254.0	219.4	202.4	311.2	314.5
Male rate ratio: Indigenous: Non-Indigenous	2.1	1.3	1.4	1.2	1.2	1.4	1.4	1.5	1.2	1.3	1.2	1.2	0.9	1.0	1.3	1.3
Indigenous females	89.8	141.8	162.6	278.0	249.6	268.4	257.5	237.2	203.7	189.7	200.1	135.8	161.0	115.6	193.1	191.0
Non-Indigenous females	41.7	102.6	143.0	259.2	222.0	167.5	140.1	132.1	133.2	133.4	140.9	134.5	125.2	160.1	147.2	147.0
Female rate ratio: Indigenous: Non-Indigenous	2.2	1.4	1.1	1.1	1.1	1.6	1.8	1.8	1.5	1.4	1.4	1.0	1.3	0.7	1.3	1.3
Rate ratio: Indigenous: Non-Indigenous	2.1	1.3	1.3	1.2	1.2	1.5	1.5	1.6	1.3	1.3	1.2	1.2	1.0	0.9	1.3	1.3

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

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Table 4.2.3: Mode of transport for fatal and serious land transport injury, by Indigenous status, 2010–11 to 2014–15

	Males (Rate[b])		Females (Rate[b])		Persons				
					Indigenous Australians		Non-Indigenous Australians		
Mode of transport[a]	Indigenous Australians	Non-Indigenous Australians	Indigenous Australians	Non-Indigenous Australians	Count	Rate[b]	Count	Rate[b]	Rate ratio[c]
Fatal injury									
Car occupant	13.2	4.1	6.1	2.1	266	9.5	2,449	3.1	3.1
Driver	8.4	3.1	2.3	1.2	136	5.3	1,714	2.1	2.5
Passenger	4.4	0.9	3.7	0.8	123	4.0	660	0.8	4.8
Unspecified[d]	0.4	0.1	0.1	0.1	7	0.2	75	0.1	2.4
Motorcyclist	1.6	1.9	0.2	0.2	25	0.9	792	1.0	0.9
Pedal cyclist	0.2	0.3	0.0	0.1	4	0.1	140	0.2	0.5
Pedestrian	5.0	1.2	2.7	0.4	101	3.8	689	0.8	4.6
Animal or occupant of animal-drawn vehicle	0.0	0.0	0.0	0.0	0	0.0	32	0.0	0.0
Other land transport	1.7	0.9	0.7	0.2	26	1.2	467	0.6	2.0

(continued)

Table 4.2.3 (continued): Mode of transport for fatal and serious land transport injury, by Indigenous status, 2010–11 to 2014–15

	Males (Rate[b])		Females (Rate[b])		Persons				
					Indigenous Australians		Non-Indigenous Australians		
Mode of transport[a]	Indigenous Australians	Non-Indigenous Australians	Indigenous Australians	Non-Indigenous Australians	Count	Rate[b]	Count	Rate[b]	Rate ratio[c]
Serious injury									
Car occupant	140.4	75.3	109.8	74.0	3,675	124.7	59,560	74.7	1.7
Driver	72.1	51.4	46.3	43.8	1,576	58.8	38,081	47.5	1.2
Passenger	53.5	17.7	50.4	23.6	1,732	52.0	16,211	20.8	2.5
Unspecified[d]	14.8	6.2	13.1	6.6	367	14.0	5,268	6.4	2.2
Motorcyclist	100.7	115.5	11.3	12.4	1,985	55.9	49,089	64.4	0.9
Pedal cyclist	56.6	68.7	13.6	16.9	1,314	34.9	32,620	43.0	0.8
Pedestrian	55.8	17.7	30.6	12.1	1,274	43.0	11,921	14.9	2.9
Animal or occupant of animal-drawn vehicle	13.6	9.7	11.3	22.2	408	12.3	12,004	15.8	0.8
Other land transport	34.8	27.7	14.5	9.4	701	24.5	14,773	18.5	1.3

(a) 'Mode of transport' is how a person was being conveyed when injured. 'Mode' is the type of vehicle or being a pedestrian.

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

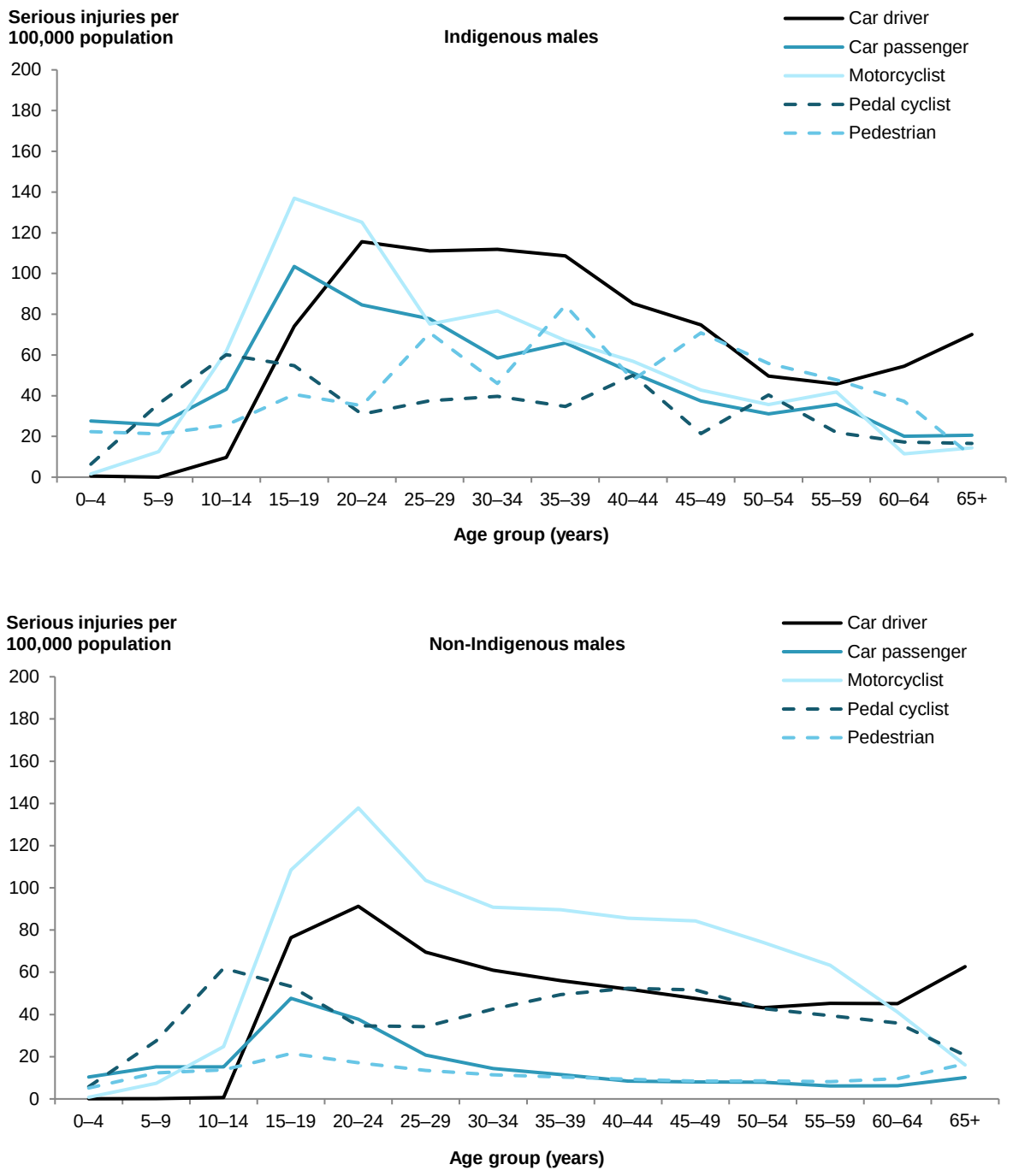
(c) Ratio of age-standardised rate for persons specified as Indigenous, divided by persons specified as non-Indigenous.

(d) Includes *Unspecified occupants inside of vehicle*, *Persons injured while on the outside of vehicle* and *Persons injured while boarding or alighting from a vehicle*.

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Figure 4.2.2: Age-specific rates of serious land transport traffic injury, by case type, by Indigenous status, 2010–11 to 2014–15: males

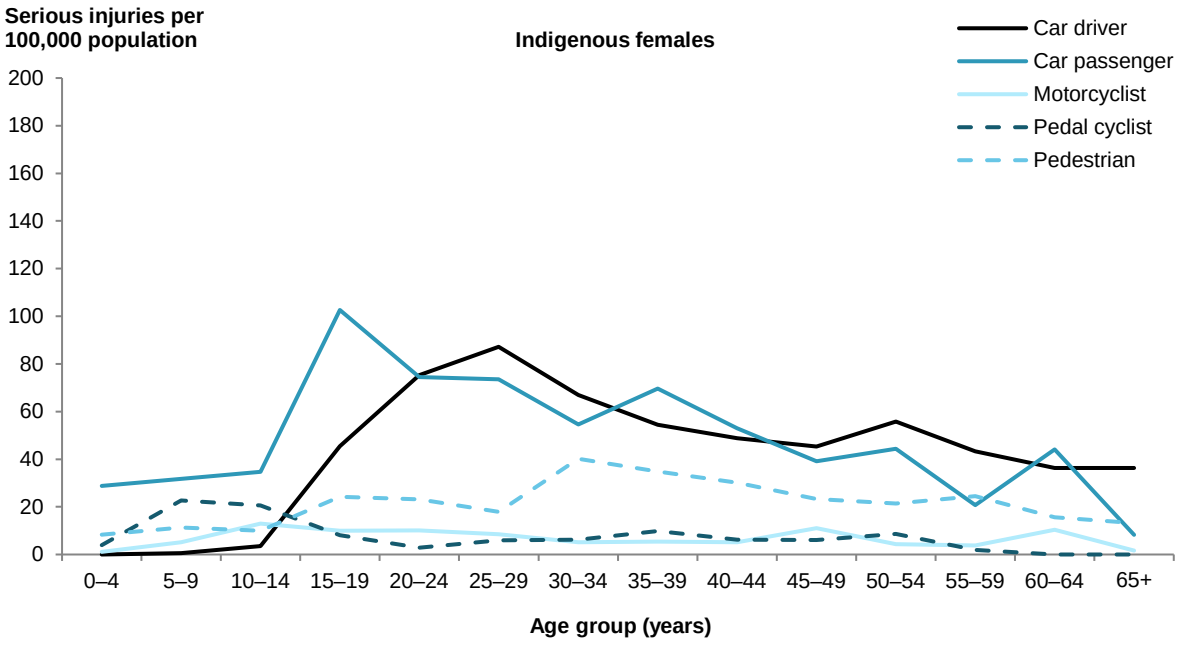


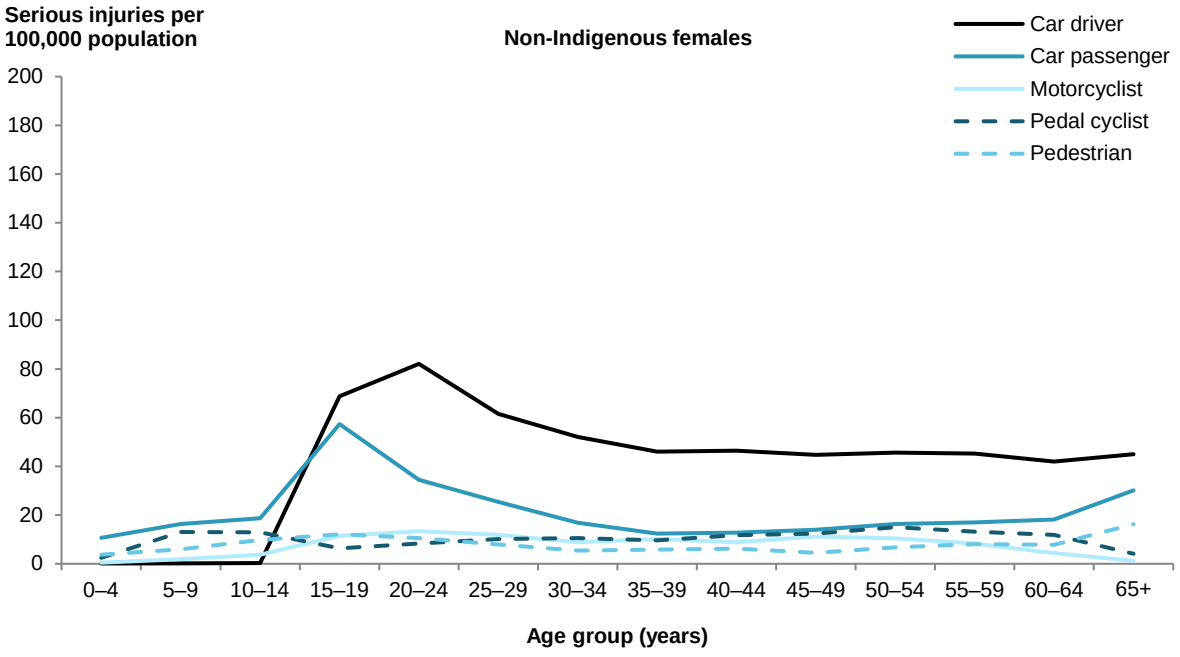
Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B1 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.3: Age-specific rates of serious land transport traffic injury, by case type, by Indigenous status, 2010–11 to 2014–15: females



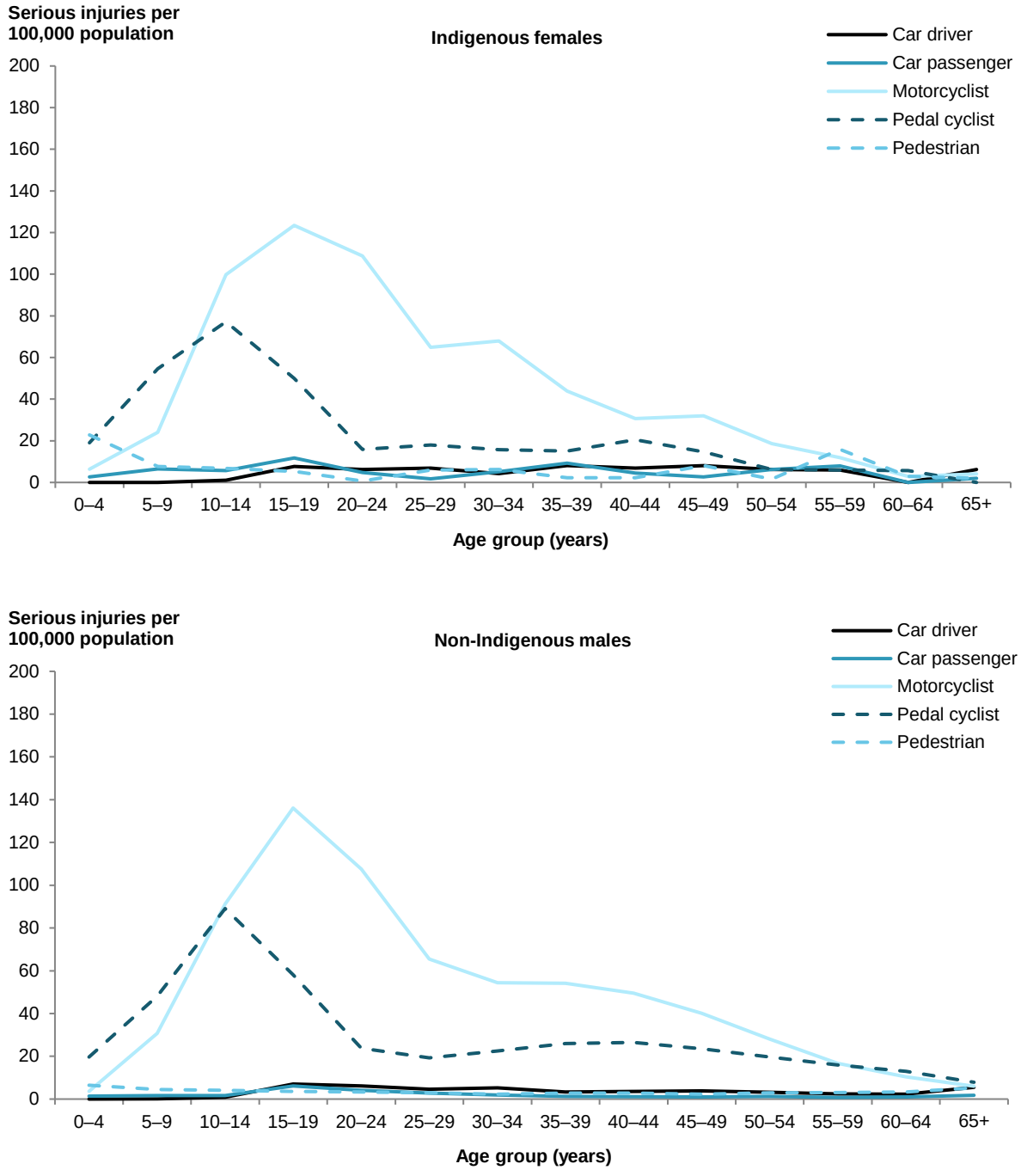


Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B1 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.4: Age-specific rates of serious land transport non-traffic injury, by case type, by Indigenous status, 2010–11 to 2014–15: males



Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B2 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Table 4.2.4: Fatal and serious land transport injury cases, by remoteness area of usual residence, by Indigenous status, by sex, 2010–11 to 2014–15

ASGC/ASGS[a] remoteness area of usual residence	Indigenous Australians				Non-Indigenous Australians			
	Males	Females	Persons		Males	Females	Persons	
	Count	Count	Count	%	Count	Count	Count	%
Fatal injury								
Major cities	40	15	55	13%	1,583	542	2,125	47%
Inner regional	46	18	63	15%	890	344	1,234	27%
Outer regional	62	30	92	22%	614	223	837	18%
Remote	40	31	71	17%	133	41	175	4%
Very remote	90	42	131	31%	57	21	78	2%
Total[b]	**284**	**134**	**422**	**100%**	**3,354**	**1,215**	**4,569**	**100%**
Serious injury								
Major cities	1,819	802	2,621	28%	71,070	35,292	106,364[d]	59%
Inner regional	1,166	550	1,716	18%	27,259	12,817	40,076	22%
Outer regional	1,384	670	2,054	22%	17,691	7,525	25,216	14%
Remote	764	370	1,134	12%	3,739	1,508	5,247	3%
Very remote	1,238	556	1,795[d]	19%	1,891	759	2,650	1%
Total[c]	**6,399**	**2,957**	**9,357**	**100%**	**121,948**	**58,017**	**179,967**	**100%**

(a) Fatal injury counts are based on the ASGS classification; serious injury counts for 2010–11 to 2011–12 are based on the ASGC classification and counts for 2012–13 to 2014–15 are based on the ASGS classification.

(b) Remoteness area of residence not reported for 10 Indigenous Australians (males = 7, females = 3) and 120 non-Indigenous Australians (males = 77, females = 43).

(c) Remoteness area of residence not reported for 37 Indigenous Australians (males = 28, females = 9) and 414 non-Indigenous Australians (males = 298, females = 116).

(d) Sex not stated for 2 non-Indigenous Australians and 1 Indigenous Australian seriously injured.

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Table 4.2.5: Age-standardised fatal and serious land transport injury rates, by remoteness area of usual residence, by Indigenous status, 2010–11 to 2014–15

ASGC/ASGS[a] remoteness area of usual residence	Age-standardised rate[b] (95% CI)					
	Indigenous Australians			Non-Indigenous Australians		
	Males	Females	Persons	Males	Females	Persons
Fatal injury						
Major cities	10 (8–14)	3 (2–5)	7 (5–9)	7 (7–7)	2 (2–2)	5 (4–5)
Inner regional	20 (15–25)	10 (7–14)	15 (12–18)	17 (16–18)	6 (6–7)	12 (11–12)
Outer regional	26 (21–33)	11 (8–15)	18 (15–22)	20 (19–22)	8 (7–9)	14 (13–15)
Remote	41 (31–54)	31 (22–42)	36 (29–44)	25 (22–29)	9 (7–12)	18 (16–20)
Very remote	60 (51–71)	25 (20–33)	42 (36–48)	24 (19–30)	13 (9–19)	20 (16–24)
Overall[c]	**22 (19–25)**	**10 (8–11)**	**15 (14–17)**	**8 (8–9)**	**3 (3–3)**	**6 (6–6)**
Serious injury						
Major cities	330 (312–347)	153 (141–165)	240 (229–251)	257 (255–259)	124 (122–125)	190 (189–192)
Inner regional	380 (354–405)	181 (164–198)	280 (265–295)	431 (426–436)	195 (191–198)	313 (310–316)
Outer regional	392 (369–415)	190 (174–206)	290 (276–303)	489 (482–496)	214 (210–219)	355 (350–359)
Remote	536 (496–577)	280 (250–311)	410 (384–435)	591 (572–610)	273 (259–287)	442 (430–454)
Very remote	512 (480–543)	233 (212–254)	371 (353–390)	723 (688–759)	414 (383–445)	592 (568–617)
Overall[c]	**402 (391–413)**	**191 (183–199)**	**295 (289–302)**	**314 (313–316)**	**147 (146–148)**	**231 (230–232)**

(a) Fatal injury rates are based on the ASGS classification; serious injury rates for 2010–11 to 2011–12 are based on the ASGC classification and rates for 2012–13 to 2014–15 are based on the ASGS classification.

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

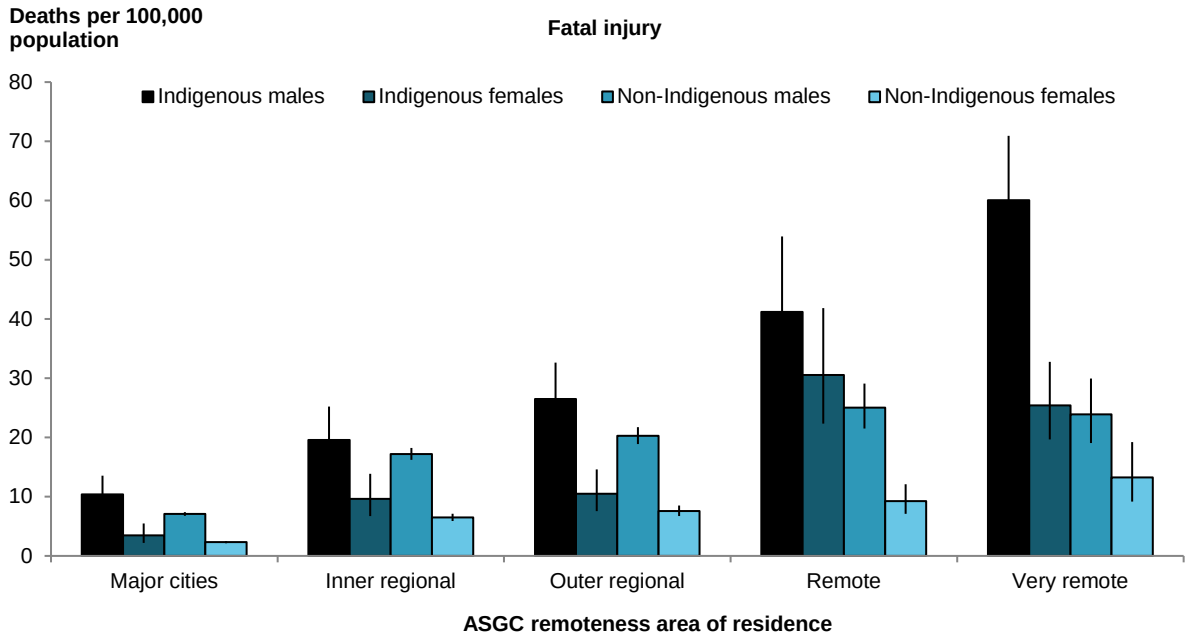
(c) All remoteness areas combined. Age-standardised; not standardised for remoteness.

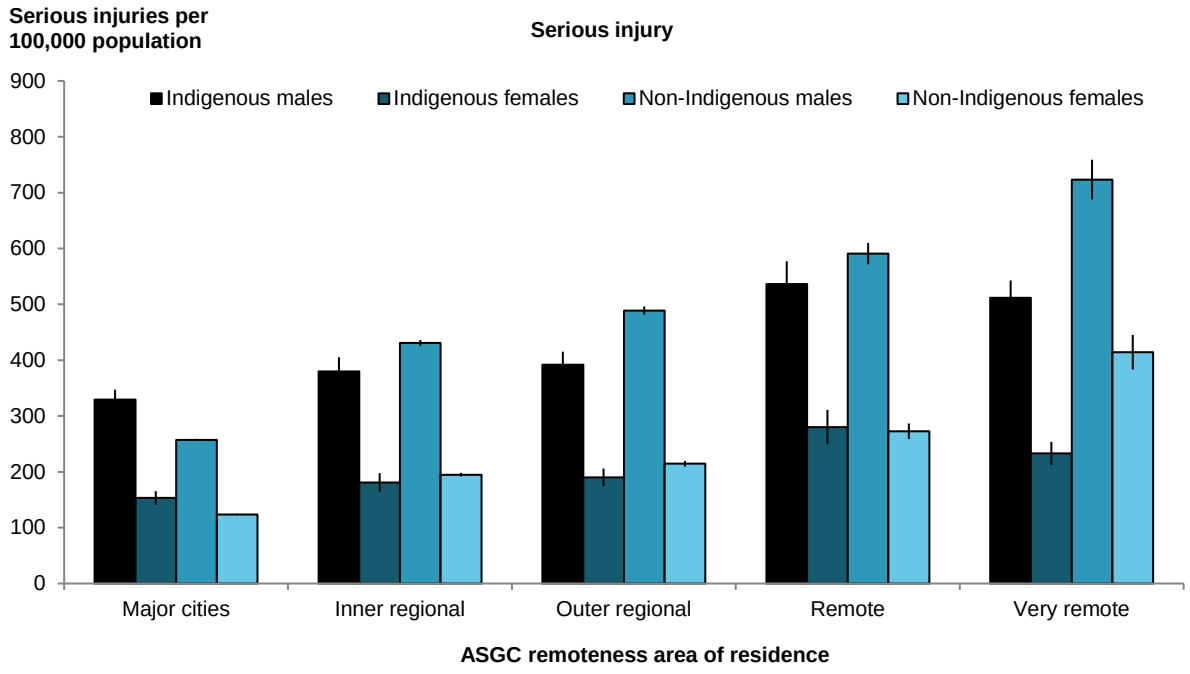
Notes

1. Confidence Intervals (in brackets) are provided to show by about how much rates might be expected to vary (between years, for example), in view of the number of cases. See Appendix A for further information.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Figure 4.2.5: Age-standardised rates of fatal and serious land transport injury, by remoteness area of usual residence, by Indigenous status, by sex, 2010–11 to 2014–15





Notes

1. Confidence Intervals are provided to show by about how much rates might be expected to vary (between years, for example), in view of the number of cases. See Appendix A for further information.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Table 4.2.6: Age-standardised land transport serious injury rates, by remoteness area of usual residence, by traffic setting, by Indigenous status, by sex, 2010–11 to 2014–15

ASGC/ASGC[a] remoteness area of usual residence	Age-standardised rate[b] (95% CI)					
	Indigenous Australians			Non-Indigenous Australians		
	Males	Females	Persons	Males	Females	Persons
Traffic						
Major cities	239 (224–255)	116 (106–127)	176 (167–185)	174 (173–176)	90 (89–91)	132 (131–133)
Inner regional	238 (217–258)	128 (113–142)	182 (170–195)	231 (227–234)	107 (104–110)	169 (166–171)
Outer regional	248 (229–267)	135 (121–148)	190 (178–201)	254 (249–260)	112 (109–116)	185 (182–188)
Remote	341 (309–374)	200 (175–226)	272 (251–292)	278 (265–291)	134 (124–144)	211 (202–219)
Very remote	351 (325–377)	178 (160–197)	264 (249–280)	320 (297–343)	178 (158–198)	260 (245–276)
Total	**269 (260–278)**	**140 (134–147)**	**204 (198–209)**	**192 (191–194)**	**96 (95–97)**	**144 (143–145)**
Non-traffic						
Major cities	75 (68–82)	19 (15–23)	47 (43–51)	71 (70–72)	16 (16–17)	44 (43–44)
Inner regional	114 (102–127)	26 (20–31)	70 (63–77)	167 (164–170)	32 (31–34)	100 (98–102)
Outer regional	106 (95–117)	27 (21–33)	67 (60–73)	195 (190–200)	41 (38–43)	120 (117–122)
Remote	143 (122–165)	40 (29–50)	91 (80–103)	257 (244–269)	60 (53–66)	164 (157–172)
Very remote	109 (96–123)	31 (24–38)	70 (63–78)	305 (281–328)	114 (98–131)	223 (208–238)
Total	**101 (96–106)**	**26 (23–28)**	**63 (61–66)**	**103 (102–104)**	**22 (22–23)**	**63 (62–63)**

(a) Rates for 2010–11 to 2011–12 are based on the ASGC classification and rates for 2012–13 to 2014–15 are based on the ASGS classification.

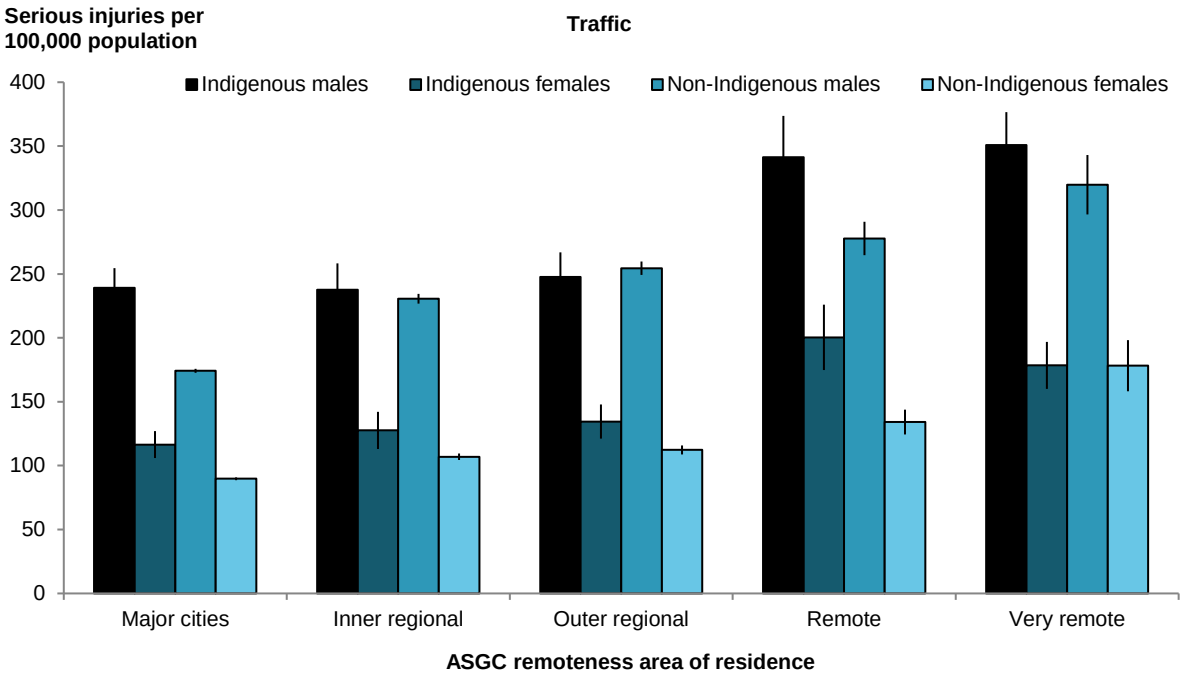
(b) Per 100,000 population per year, adjusted by direct standardisation to the Australian population in June 2001.

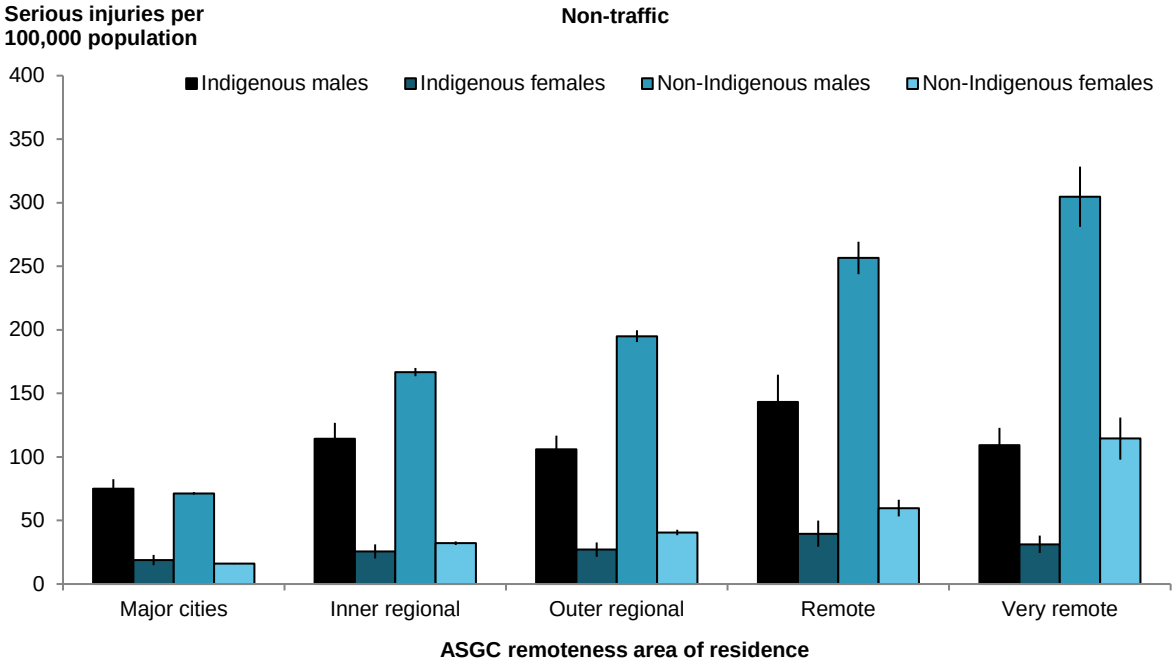
Notes

1. Confidence Intervals (in brackets) are provided to show by about how much rates might be expected to vary (between years, for example), in view of the number of cases. See Appendix A for further information.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.6: Age-standardised rates of land transport serious injury for traffic and non-traffic cases, by remoteness area, by Indigenous status, by sex, 2010–11 to 2014–15



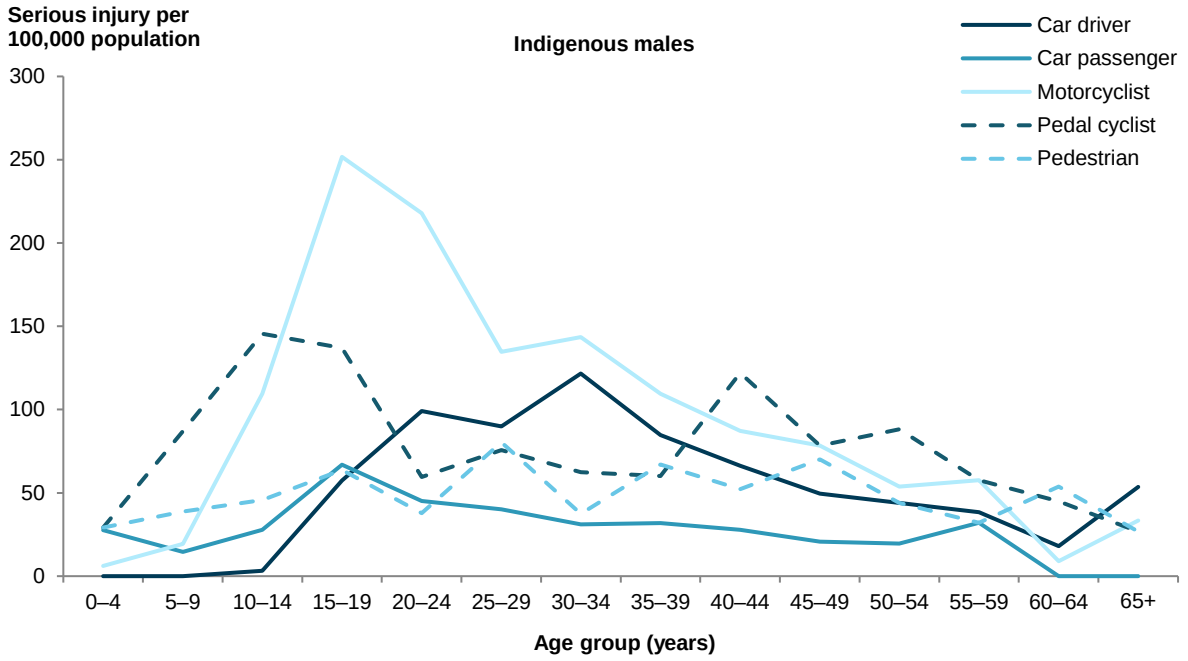


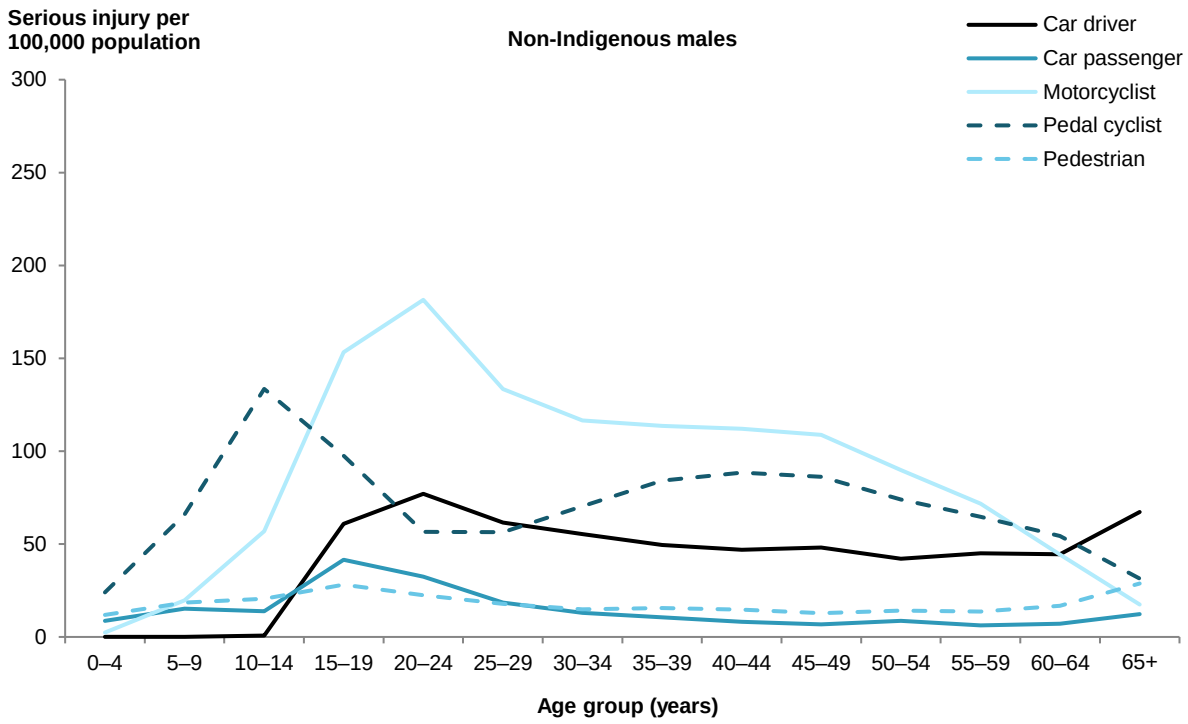
Notes

1. Confidence Intervals are provided to show by about how much rates might be expected to vary (between years, for example), in view of the number of cases. See Data issues for further information.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.7: Age-specific rates of serious injury, by case type, for Indigenous males and non-Indigenous males: residents of Major cities, 2010–11 to 2014–15



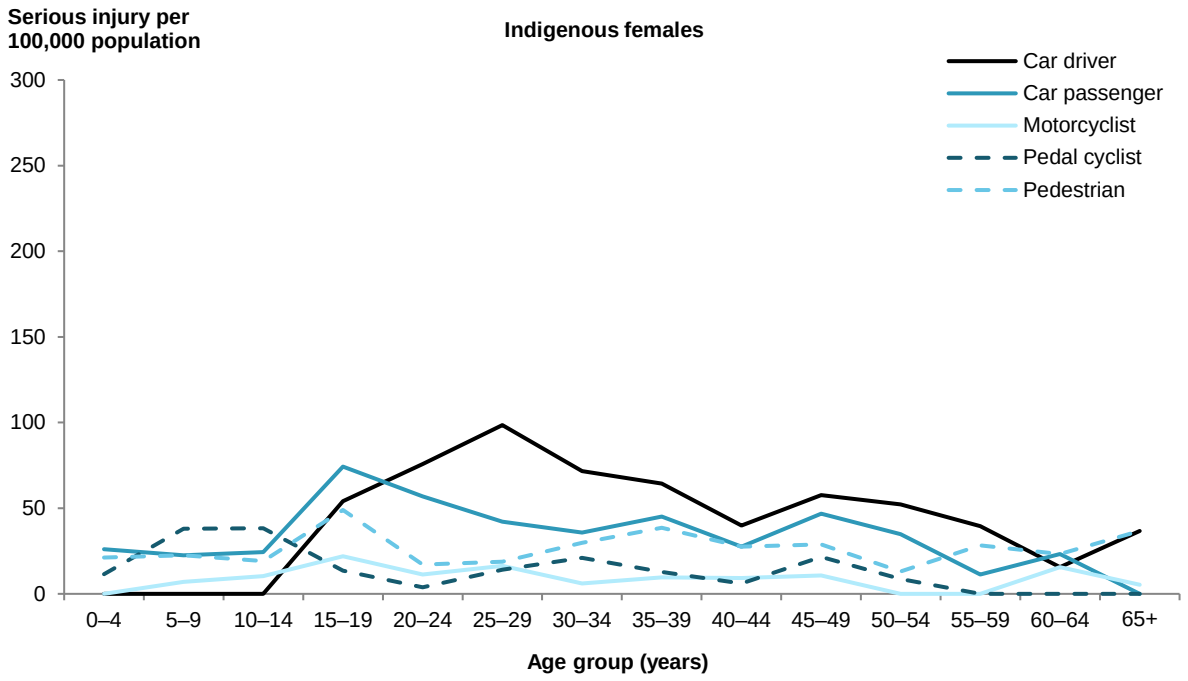


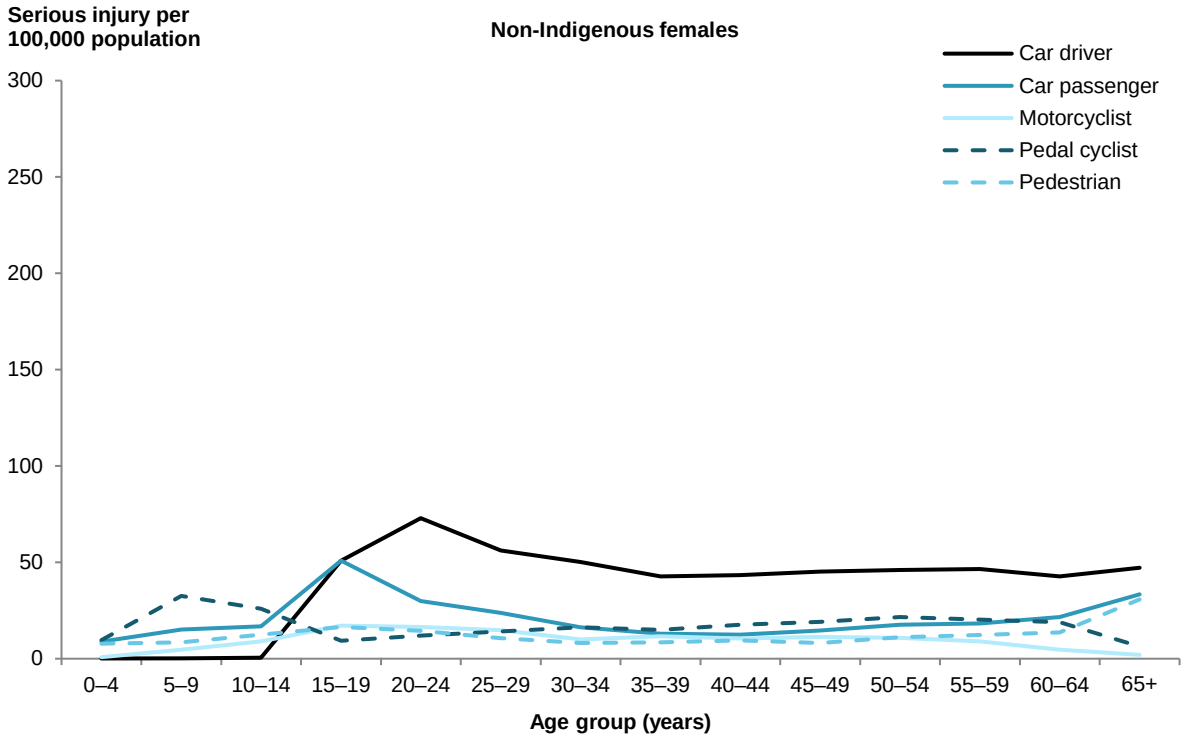
Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B3 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.8: Age-specific rates of land transport serious injury, by case type, for Indigenous females and non-Indigenous females: residents of Major cities, 2010–11 to 2014–15



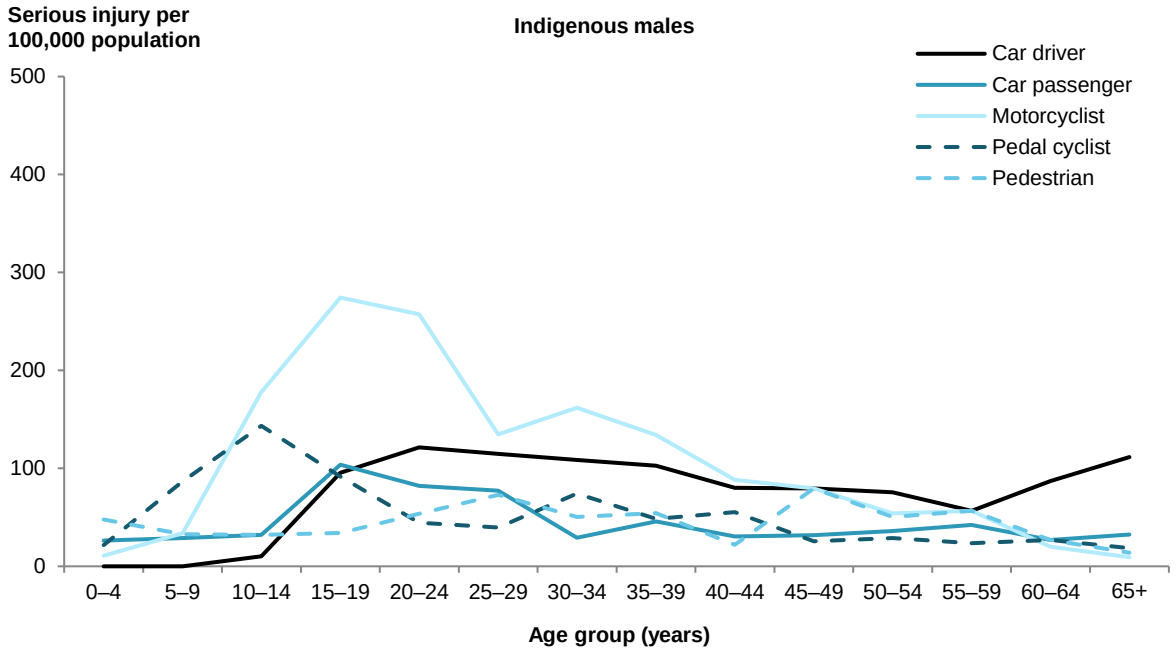


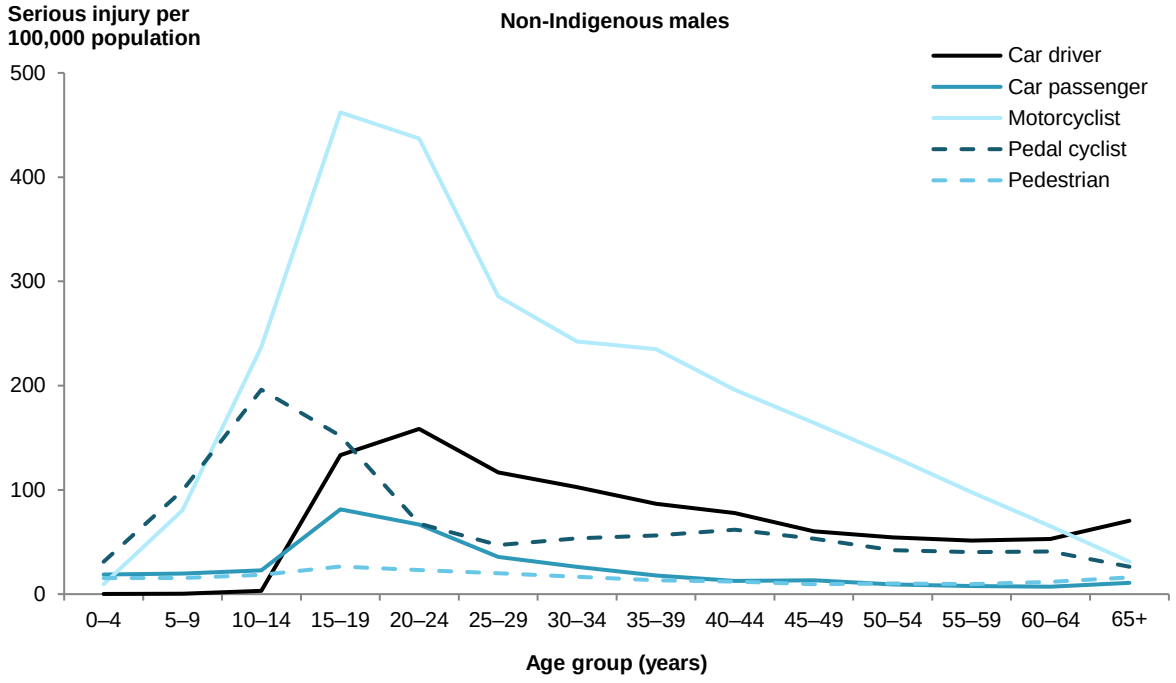
Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B3 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.9: Age-specific rates of land transport serious injury, by case type, for Indigenous males and non-Indigenous males: residents of Inner and outer regional areas, 2010–11 to 2014–15



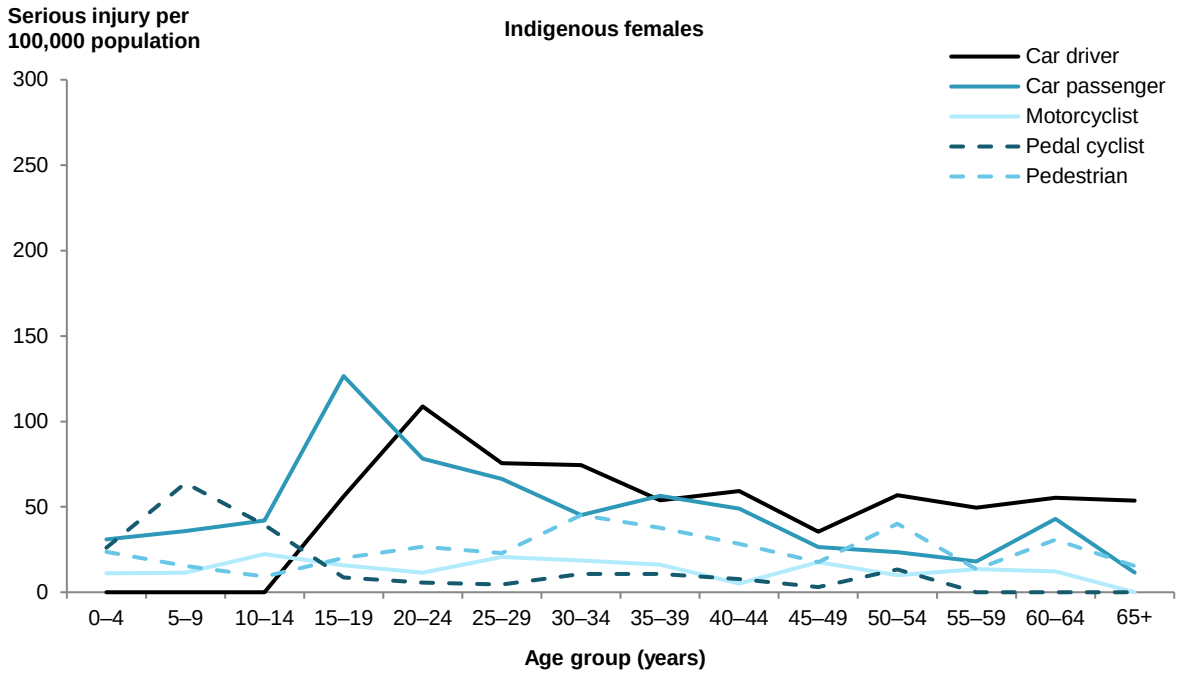


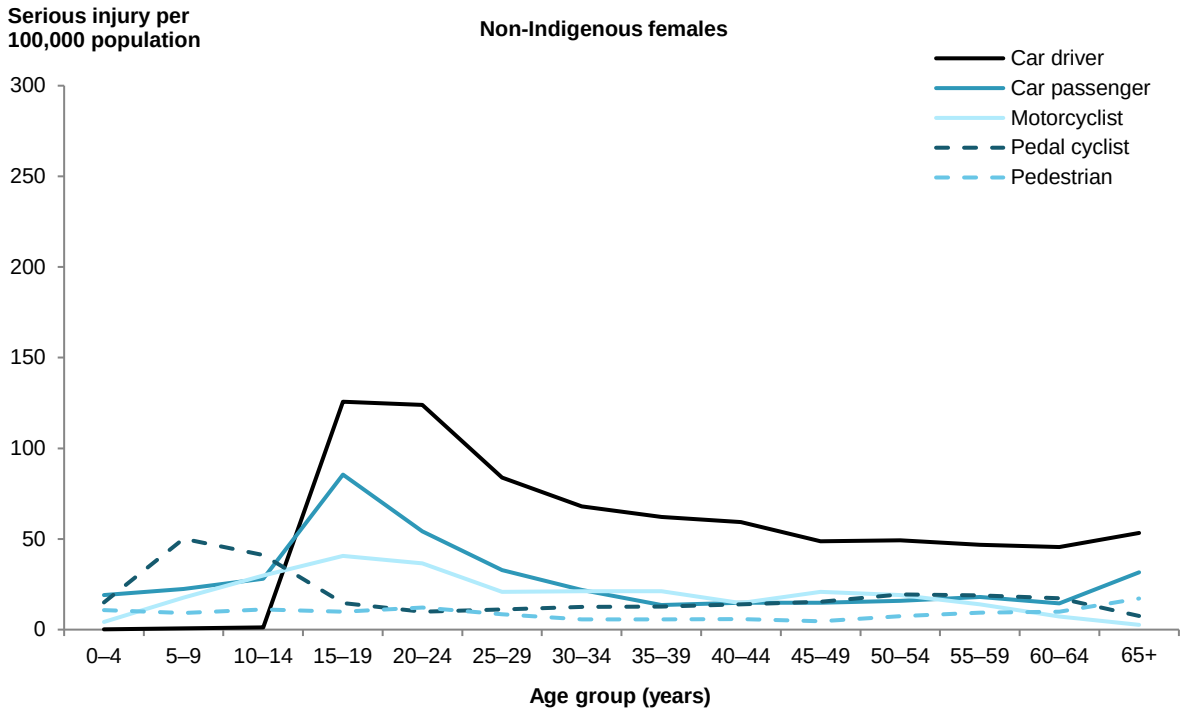
Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B4 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.10: Age-specific rates of land transport serious injury, by case type, for Indigenous females and non-Indigenous females: residents of Inner and outer regional areas, 2010–11 to 2014–15



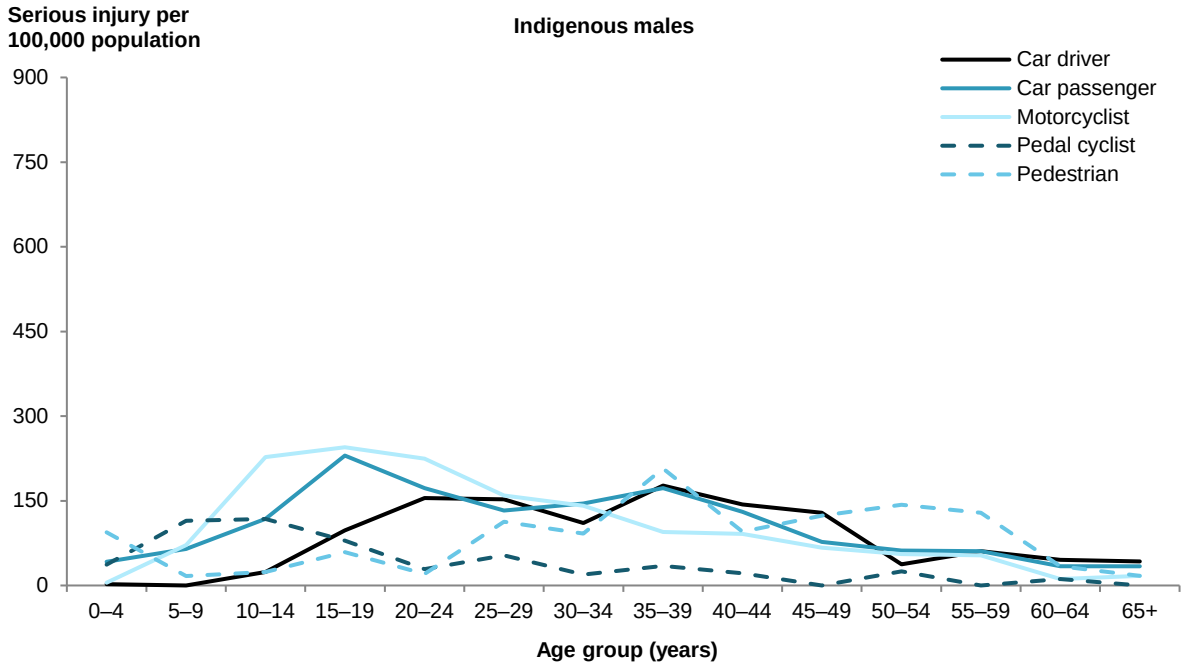


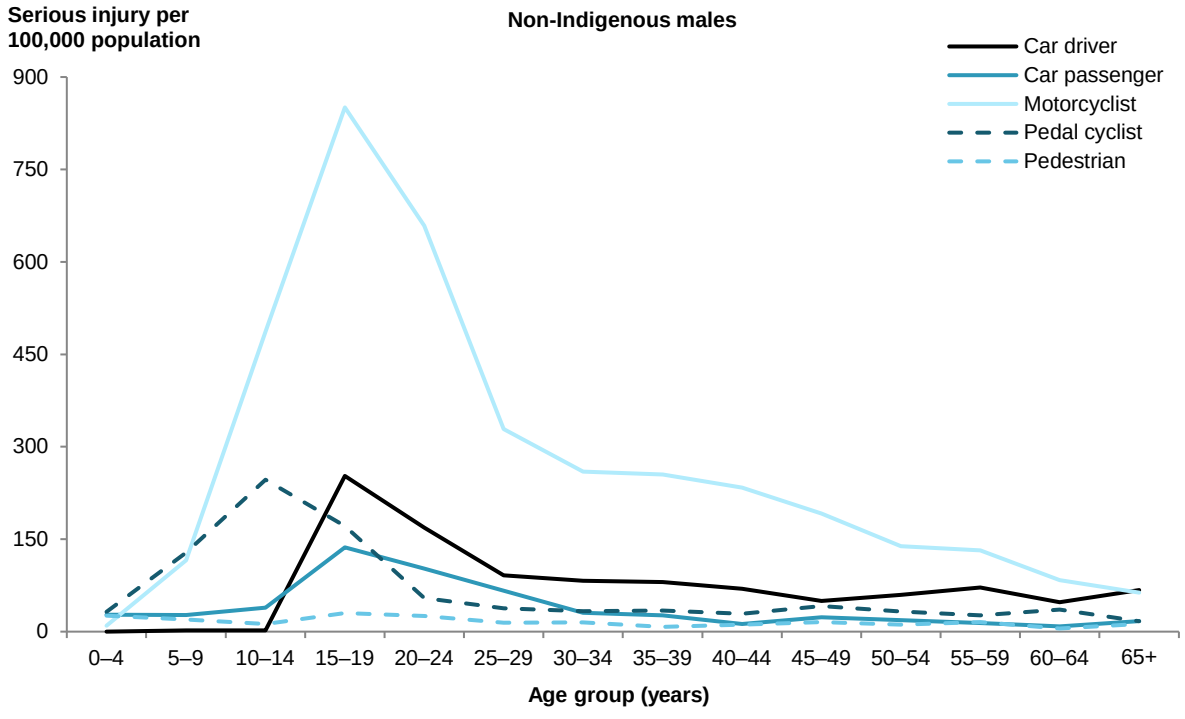
Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B4 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.11: Age-specific rates of land transport serious injury, by case type, for Indigenous males and non-Indigenous males: residents of Remote and very remote areas, 2010–11 to 2014–15



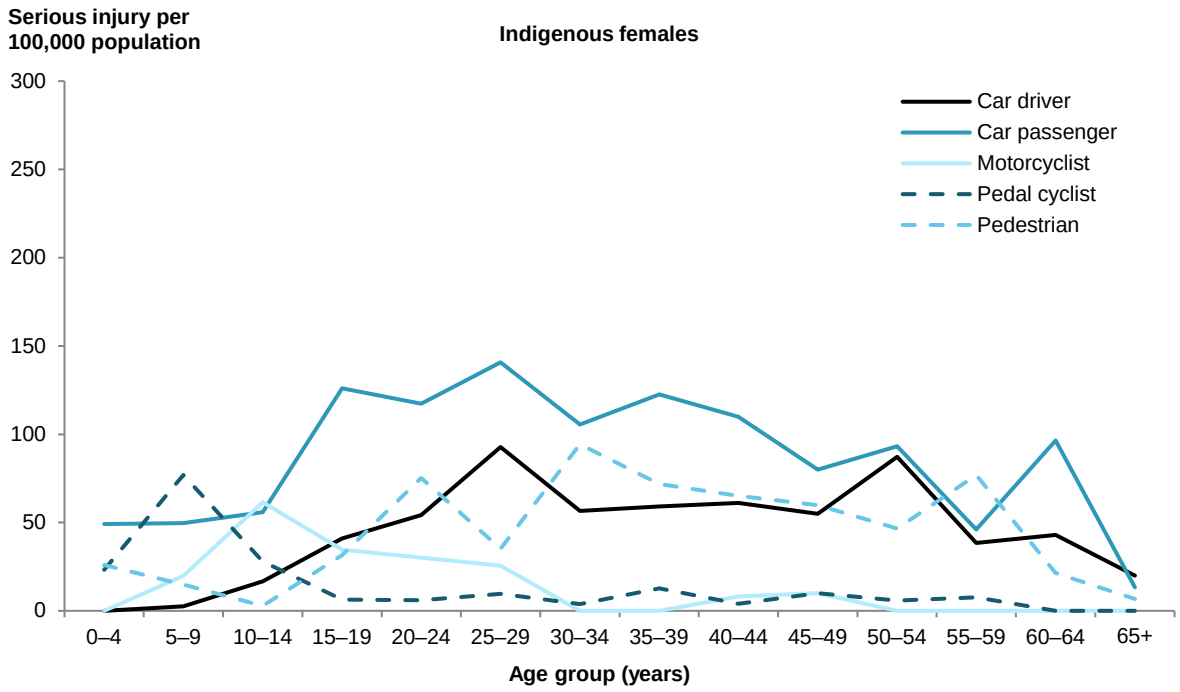


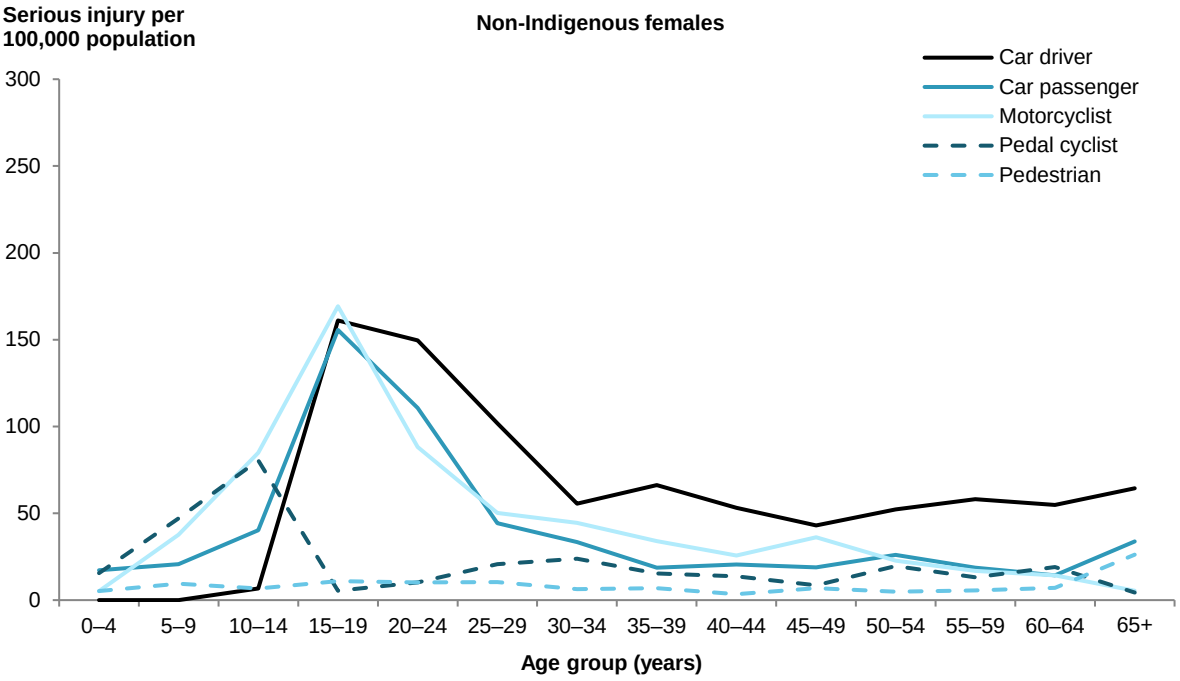
Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B5 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Figure 4.2.12: Age-specific rates of land transport serious injury, by case type, for Indigenous females and non-Indigenous females: residents of Remote and very remote areas, 2010–11 to 2014–15





Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. For data underpinning this figure, see Table B5 in Appendix B.

Source: AIHW National Hospital Morbidity Database.

Table 4.2.7: Mechanism of injury for Indigenous Australians fatally injured in land transport crashes, 2010–11 to 2014–15

	Counterpart in collision										
Mode of transport	**Car, pick-up truck or van**	**2- or 3-wheeled motor vehicle**	**Pedal cycle**	**Pedestrian or animal**	**Heavy transport vehicle or bus**	**Train**	**Other non-motor vehicle**	**Fixed or stationary object**	**Non-collision transport crash[a]**	**Other and unspecified transport event[b]**	**Total**
Car occupant	46	0	0	7	17	2	0	92	100	2	266
Motorcyclist	11	1	0	0	1	0	0	9	3	0	25
Pedal cyclist	3	0	0	0	0	0	0	0	1	0	4
Pedestrian	78	3	0	0	13	2	0	0	0	5	101
Occupant of pick-up truck or van	1	0	0	0	2	0	0	0	0	1	4
Occupant of heavy transport vehicle	2	0	0	0	1	0	0	0	0	0	3
Bus occupant	0	0	0	0	0	0	0	0	0	0	0
Other specified	0	0	0	1	1	0	0	0	0	5	7
Unknown	0	0	0	0	0	0	0	0	0	12	12
Total	**141**	**4**	**0**	**8**	**35**	**4**	**0**	**101**	**104**	**25**	**422**

(a) Includes events such as a vehicle overturning, or a rider falling or being thrown from a motorcycle or pedal cycle without antecedent collision.

(b) Includes collisions with other and unspecified motor vehicles, injury occurring in other specified ways (such as being trapped by the door or other part of a car) and transport injury occurring in an unspecified way.

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Mortality Database.

Table 4.2.8: Mechanism of injury for Indigenous Australians seriously injured in land transport crashes, 2010–11 to 2014–15

	Counterpart in collision										
Mode of transport	**Car, pick-up truck or van**	**2- or 3-wheeled motor vehicle**	**Pedal cycle**	**Pedestrian or animal**	**Heavy transport vehicle or bus**	**Train**	**Other non-motor vehicle**	**Fixed or stationary object**	**Non-collision transport crash[a]**	**Other and unspecified transport event[b]**	**Total**
Car occupant	844	1	1	66	80	1	4	949	1,533	196	3,675
Motorcyclist	179	61	1	35	17	0	8	279	1,105	300	1,985
Pedal cyclist	152	7	31	9	5	0	2	73	818	217	1,314
Pedestrian	1057	29	16	20	53	13	5	0	0	81	1,274
Occupant of pick-up truck or van	11	0	0	0	1	0	0	16	47	8	83
Occupant of heavy transport vehicle	5	1	0	0	8	0	0	4	49	6	73
Bus occupant	7	0	0	0	2	0	0	1	46	5	61
Animal rider or occupant of animal-drawn vehicle	0	0	0	0	0	0	0	2	387	19	408
Occupant of special all-terrain or off-road vehicle	0	0	0	0	0	0	0	0	0	247	247
Occupant of 3-wheeled motor vehicle	2	0	0	0	0	0	0	1	3	0	6
Occupant of tram	0	0	0	0	0	0	0	0	0	3	3
Occupant of train	0	0	0	0	0	0	0	0	0	16	16
Occupant of special agricultural or industrial or construction vehicle	0	0	0	0	0	0	0	0	0	53	53
Unknown	0	0	0	0	0	0	0	0	44	115	159
Total	**2,257**	**99**	**49**	**130**	**166**	**14**	**19**	**1,325**	**4,032**	**1,266**	**9,357**

(a) Includes events such as a vehicle overturning, or a rider falling or being thrown from a motorcycle or pedal cycle without antecedent collision.

(b) Includes collisions with other and unspecified motor vehicles, or injury occurring in other specified ways (such as being trapped by the door or other part of a car) and transport injury occurring in an unspecified way.

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Table 4.2.9: Most common mechanisms for land transport injury, by Indigenous status, 2010–11 to 2014–15

	Indigenous Australians		Non-Indigenous Australians	
Mechanism of injury	**Traffic (%)**	**Non-Traffic (%)**	**Traffic (%)**	**Non-Traffic (%)**
Fatal injury	(*n* = 385)	(*n* = 30)	(*n* = 4,006)	(*n* = 465)
Car occupant injured in a non-collision transport crash	25.5	3.3	8.8	7.5
Pedestrian injured in a collision with a car, pick-up truck or van	16.9	43.3	8.7	20.4
Car occupant injured in a collision with a fixed or stationary object	22.6	13.3	22.5	3.0
Car occupant injured in a collision with a car, pick-up truck or van	11.7	3.3	17.4	0.2
All other mechanisms	23.4	36.7	42.6	68.8
Total	**100.0**	**100.0**	**100.0**	**100.0**
Serious injury	(*n* = 6,214)	(*n* = 2,336)	(*n* = 113,341)	(*n* = 47,652)
Car occupant injured in a non-collision transport crash	21.0	6.5	8.0	3.8
Pedestrian injured in a collision with a car, pick-up truck or van	13.1	5.2	6.4	3.3
Car occupant injured in a collision with a fixed or stationary object	13.1	1.0	10.6	2.7
Car occupant injured in a collision with a car, pick-up truck or van	14.1	3.2	23.5	1.2
Pedal cyclist injured in a non-collision transport crash	5.0	21.5	7.4	22.6
Motorcyclist injured in a non-collision transport crash	7.0	28.5	10.0	32.2
All other mechanisms	26.7	34.1	34.1	34.2
Total	**100.0**	**100.0**	**100.0**	**100.0**

Notes

1. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).
2. Column percentages may not sum to exactly 100% due to rounding.

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Table 4.2.10: Mechanism of fatal injury for car occupants, 2010–11 to 2014–15

	Counterpart in collision											
Injured person	Car, pick-up truck or van	2- or 3-wheeled motor vehicle	Pedal cycle	Pedestrian or animal	Heavy transport vehicle or bus	Train	Other non-motor vehicle	Fixed or stationary object	Non-collision transport crash[a]	Other and unspecified transport event[b]	Total	%[c]
Fatal injury—Indigenous Australians (*n* = 422)												
Car occupant	46	0	0	7	17	2	0	92	100	2	266	63.0
Driver	25	0	0	2	11	2	0	56	40	0	136	32.2
Passenger	20	0	0	4	6	0	0	33	57	0	120	28.4
Person on outside of vehicle	1	0	0	1	0	0	0	0	1	0	3	0.7
Person boarding or alighting	0	0	0	0	0	0	0	1	1	0	2	0.0
Unspecified	0	0	0	0	0	0	0	2	1	2	5	1.2
Fatal injury—Non-Indigenous Australians (*n* = 4,569)												
Car occupant	700	0	1	9	374	15	1	916	390	43	2,449	53.6
Driver	480	0	1	6	268	11	1	694	244	9	1,714	37.5
Passenger	210	0	0	3	96	4	0	206	120	5	644	14.1
Person on outside of vehicle	0	0	0	0	0	0	0	1	15	0	16	0.4
Person boarding or alighting	1	0	0	0	1	0	0	2	4	0	8	0.2
Unspecified	9	0	0	0	9	0	0	13	7	29	67	1.5

(a) Includes events such as a vehicle overturning, or a rider falling or being thrown from a motorcycle or pedal cycle without antecedent collision.

(b) Includes collisions with other and unspecified motor vehicles, injury occurring in other specified ways (such as being trapped by the door or other part of a car) and transport injury occurring in an unspecified way.

(c) Percentage of all fatal land transport injury.

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Mortality Database.

Table 4.2.11: Mechanism of serious injury for car occupants, 2010–11 to 2014–15

	Counterpart in collision											
Injured person	**Car, pick-up truck or van**	**2- or 3-wheeled motor vehicle**	**Pedal cycle**	**Pedestrian or animal**	**Heavy transport vehicle or bus**	**Train**	**Other non-motor vehicle**	**Fixed or stationary object**	**Non-collision transport crash[a]**	**Other and unspecified transport event[b]**	**Total**	**%[c]**
Serious injury—Indigenous (*n* = 9,357)												
Car occupant	844	1	1	66	80	1	4	949	1,533	196	3,675	39.3
Driver	409	1	0	31	45	0	3	529	547	11	1,576	16.8
Passenger	397	0	0	31	31	0	1	398	789	19	1,666	17.8
Person on outside of vehicle	10	0	1	3	0	0	0	3	49	0	66	0.7
Person boarding or alighting	5	0	0	0	0	0	0	0	77	0	82	0.9
Unspecified	23	0	0	1	4	1	0	19	71	166	285	3.0
Serious injury—Non-Indigenous Australians (*n* = 179,967)												
Car occupant	27,363	114	34	522	2,247	32	54	13,407	12,739	3,048	59,560	33.1
Driver	18,917	87	23	314	1,675	21	36	9,863	6,614	531	38,081	21.2
Passenger	7,745	24	3	64	536	10	11	3,348	3,430	273	15,444	8.6
Person on outside of vehicle	125	3	5	104	3	1	1	35	490	0	767	0.4
Person boarding or alighting	189	0	1	17	4	0	1	37	1,869	0	2,118	1.2
Unspecified	387	0	2	23	29	0	5	124	336	2,244	3,150	1.8

(a) Includes events such as a vehicle overturning, or a rider falling or being thrown from a motorcycle or pedal cycle without antecedent collision.

(b) Includes collisions with other and unspecified motor vehicles, injury occurring in other specified ways (such as being trapped by the door or other part of a car) and transport injury occurring in an unspecified way.

(c) Percentage of all serious land transport injury.

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Table 4.2.12: Trends in age-standardised rates for fatal and serious injury, by Indigenous status, 2010–11 to 2014–15

	Age-standardised rate per 100,000 population (95% CI)[a]									
	Fatally injured					Seriously injured				
	2010–11	2011–12	2012–13	2014–15	2015–16	2010–11	2011–12	2012–13	2013–14	2014–15
Indigenous Australians										
Males	25 (18–32)	24 (17–32)	14 (10–19)	23 (16–30)	21 (15–28)	353 (330–377)	363 (339–387)	426 (400–451)	442 (416–467)	421 (396–446)
Females	7 (4–10)	12 (7–17)	13 (8–18)	8 (5–12)	8 (5–12)	162 (146–178)	182 (165–198)	187 (170–203)	206 (188–224)	215 (197–233)
Persons	16 (12–19)	18 (14–22)	14 (10–17)	16 (12–19)	15 (11–18)	257 (243–271)	271 (257–285)	305 (290–320)	323 (307–338)	317 (302–332)
Non-Indigenous Australians										
Males	9 (9–10)	9 (8–10)	8 (8–9)	8 (7–8)	7 (7–8)	299 (295–302)	309 (305–313)	317 (313–321)	329 (325–333)	318 (314–321)
Females	3 (3–4)	3 (3–4)	3 (3–3)	3 (2–3)	3 (3–3)	139 (136–142)	140 (137–142)	149 (147–152)	155 (152–158)	152 (149–154)
Persons	6 (6–7)	6 (6–7)	6 (5–6)	5 (5–6)	5 (5–5)	220 (217–222)	225 (223–228)	234 (231–236)	243 (240–245)	235 (233–237)

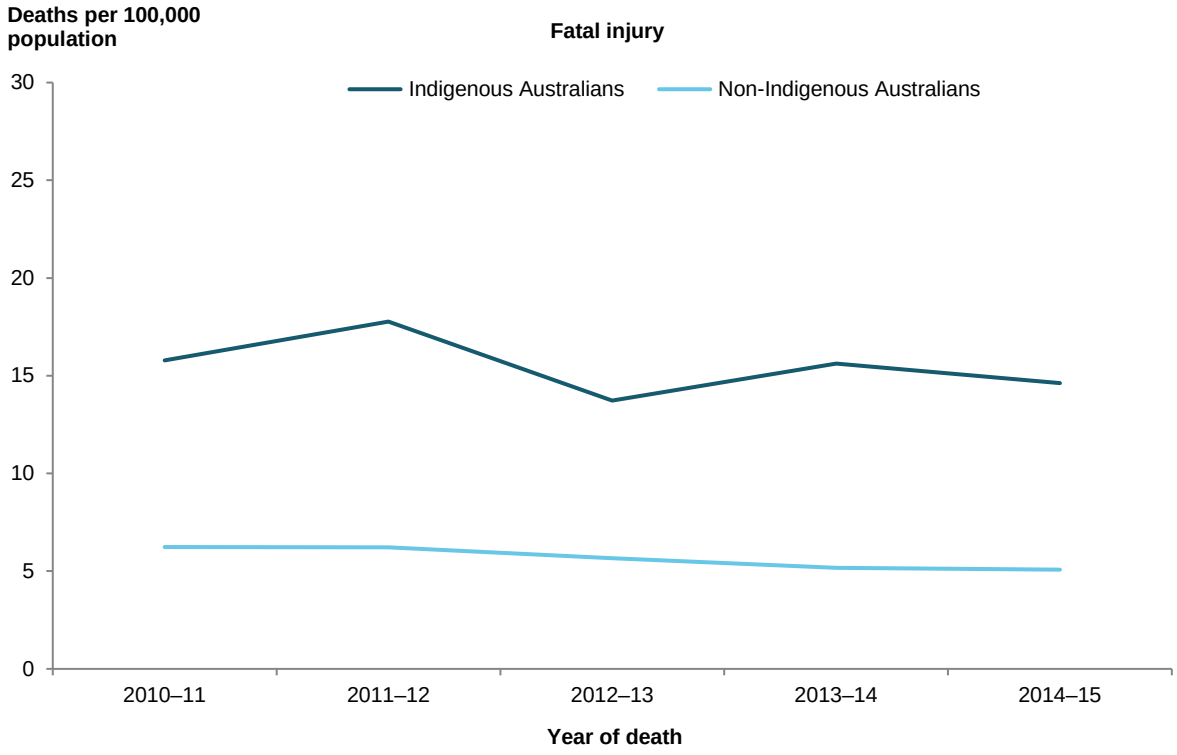
(a) Per 100,000 population per year, adjusted by direct standardisation to the Australian population in June 2001.

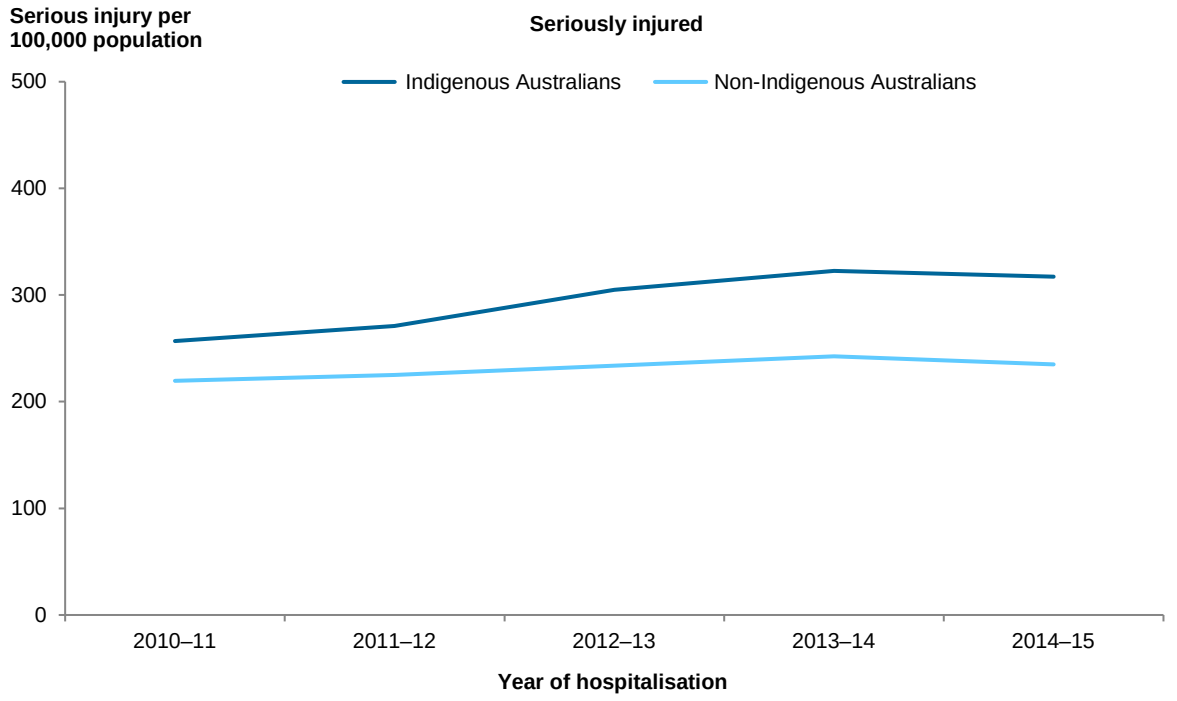
Notes

1. Confidence Intervals (in brackets) are provided to show by about how much rates might be expected to vary (between years, for example), in view of the number of cases. See Appendix A for further information.
2. Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Mortality Database, AIHW National Hospital Morbidity Database.

Figure 4.2.13: Age-standardised annual rates of fatal and serious land transport injury for Indigenous and non-Indigenous Australians, 2010–11 to 2014–15

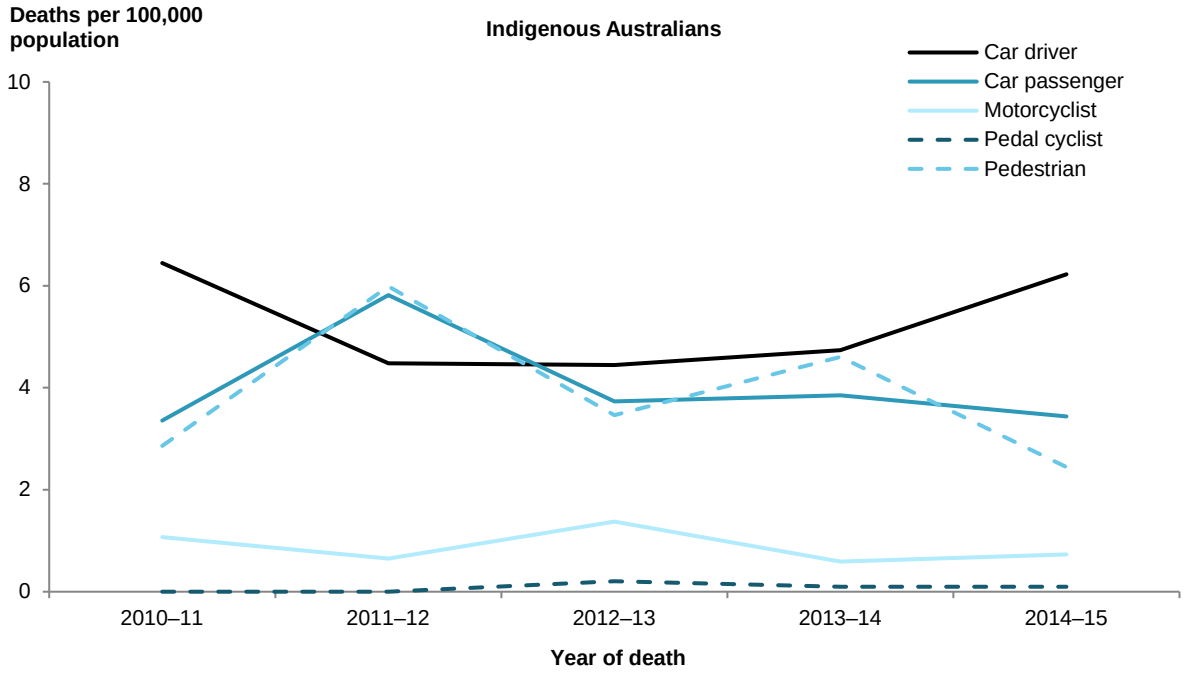


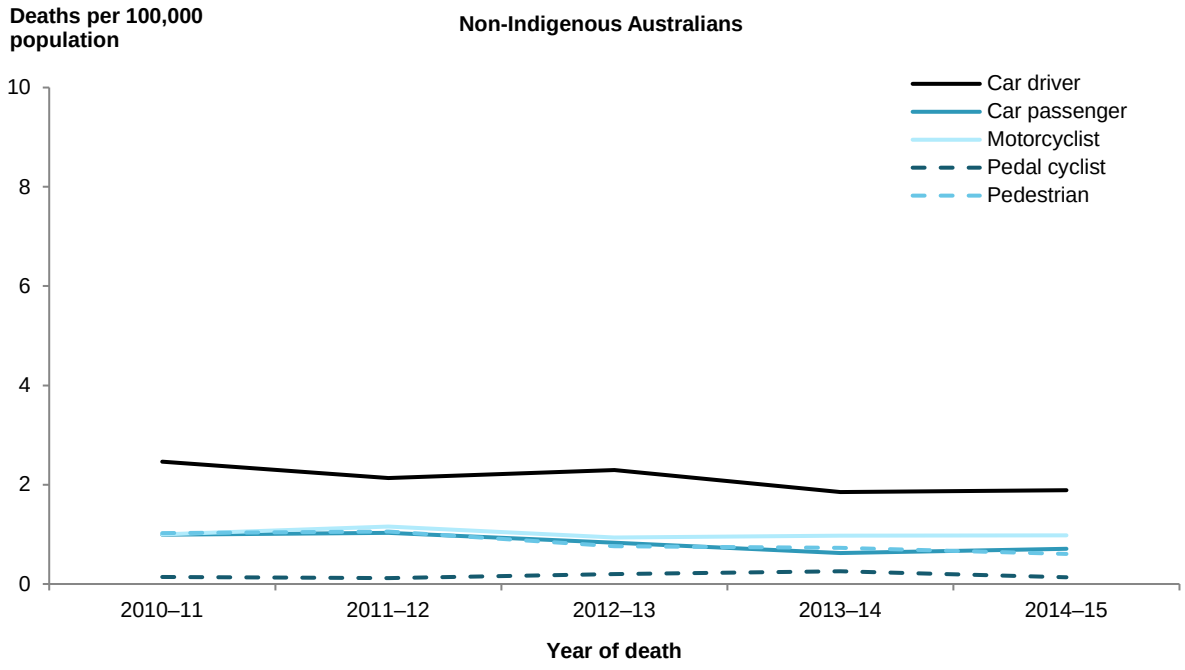


Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Figure 4.2.14: Age-standardised annual rates of fatal land transport injury, by road user type, for Indigenous and non-Indigenous Australians, 2010–11 to 2014–15

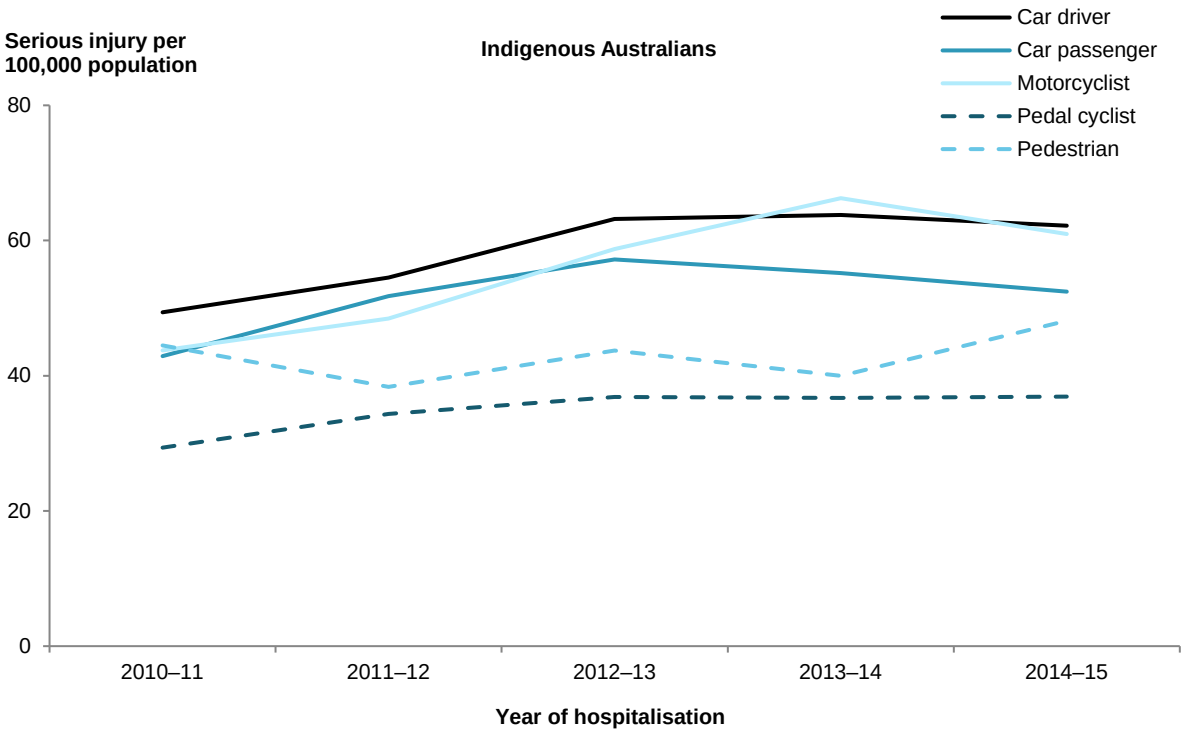


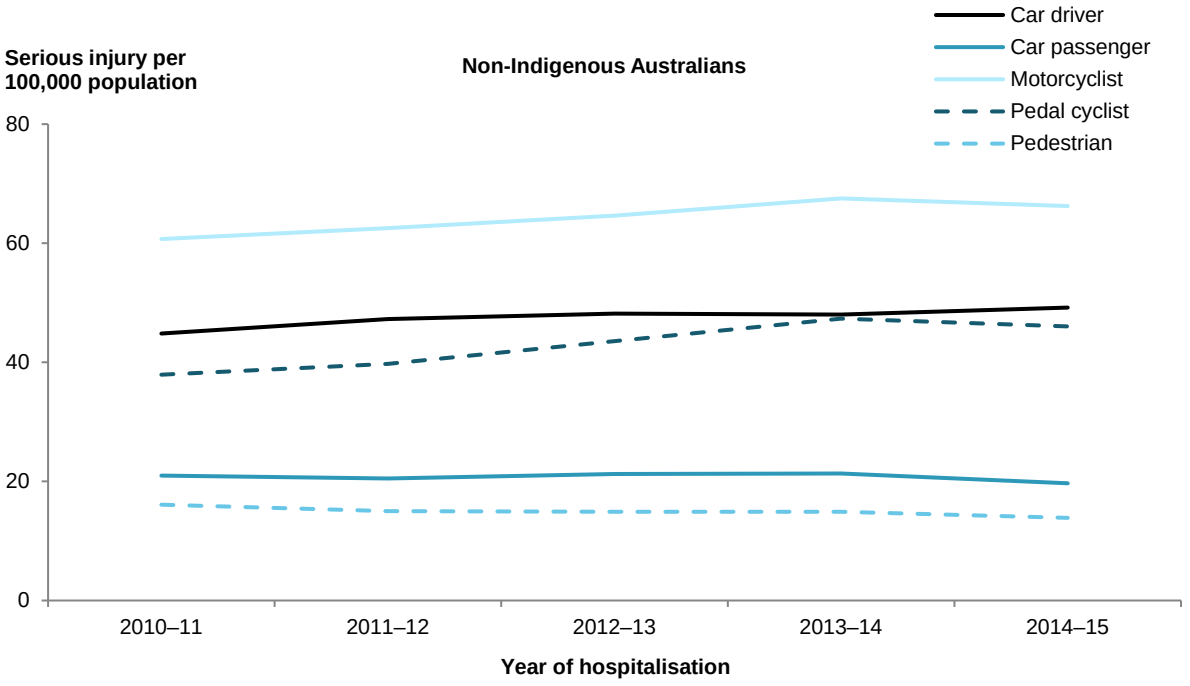


Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Mortality Database.

Figure 4.2.15: Age-standardised rates of serious land transport injury, by road user type, for Indigenous and non-Indigenous Australians, 2010–11 to 2014–15





Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Appendix A: Data issues

Comparability with reports by other organisations

National cause of death data (mortality data) are compiled by the Australian Bureau of Statistics (ABS) and classified in accordance with an international standard: the International Classification of Diseases (ICD) (WHO 2016). Australian hospitals use the Australian clinical modification of the ICD (ICD-10-AM) when coding data on persons injured and subsequently admitted to hospital (morbidity data). This provides a basis for reporting mortality and morbidity data according to the same cause categories.

The ICD provides a nationally consistent basis for looking at fatal and serious injuries due to transport crashes of all kinds (road, rail, water and air), taken together. 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 safety in each transport mode individually. For example, road safety statistics compiled by the BITRE focus on crashes on public roads, whereas the ICD and the data sources used here cover road crashes both on and off public roads. For national road deaths, readers should refer to the 'Road statistics' part of the BITRE website at www.bitre.gov.au, where road death statistics are published on a monthly basis. Similarly, for details on marine, rail and air safety, the relevant part of the Australian Transport Safety Bureau (ATSB) website at https://www.atsb.gov.au/ should be consulted.

Fatal injury data

Data on fatal injuries in this report are from the AIHW National Mortality Database (NMD). The NMD comprises cause of death unit record file data, which are provided to the AIHW by the Registries of Births, Deaths and Marriages and the National Coronial Information System (managed by the Victorian Department of Justice and Community Safety), and include cause of death coded by the Australian Bureau of Statistics (ABS).

Mortality data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory. Eighty-eight per cent of Indigenous Australians live in these 5 jurisdictions. Other jurisdictions have a small number of Indigenous deaths, and identification of Indigenous deaths in their death registration systems is relatively poor, making the data less reliable.

Data are presented according to the year in which each death occurred, not according to year of registration. Deaths registered in 2012 and earlier are based on the final version of cause of death data; deaths registered in 2013 are based on the revised version, while deaths registered in 2014 and 2015 are based on the preliminary version. Hence, deaths registered in 2013 to 2015 are subject to further revision by the ABS.

The data quality statements underpinning the NMD can be found on the following ABS internet pages:

ABS quality declaration summary for *Deaths, Australia 2017* (ABS cat. no. 3302.0) http://www.abs.gov.au/Ausstats/abs@.nsf/0/9FD0E6AAA0BB3388CA25750B000E3CF5?OpenDocument.

ABS quality declaration summary for *Causes of death, Australia, 2017* (ABS cat. no. 3303.0) http://www.abs.gov.au/ausstats/abs%40.nsf/mf/3303.0/.

For more information on the AIHW NMD see Deaths data at AIHW https://www.aihw.gov.au/about-our-data/our-data-collections/national-mortality-database.

Records that meet the following criteria were included in this report:

- date of death 1 July 2010 to 30 June 2015 and registered by 31 December 2015
- *Underlying cause of death* (UCoD) classified to an ICD-10 external cause code in the range V01–V99 (that is, the 'Transport accidents' section of Chapter XX External causes of morbidity and mortality)
- *Place of usual residence* recorded as the Northern Territory, Western Australia, South Australia, Queensland or New South Wales.

Use of these criteria resulted in the inclusion of 5,340 transport-related deaths.

Table 4.1.1 includes all deaths with a UCoD classified to any ICD-10 external cause code (that is, V01–Y98), rather than restricted to the transport code range (V01–V99) used in the remainder of the report.

Some types of records in the NMD that include ICD codes referring to transport were not included:

- records in which an ICD-10 code in the range V01–V99 was present, but as an *Additional cause of death* and not as the UCoD (100 deaths including 4 Indigenous deaths). In 38% of these cases, the UCoD was *Ischaemic heart disease*. A wide range of other diseases accounted for another 51%. In 11% of these excluded cases (11 deaths), the UCoD was another external cause of injury (for example, *Fall*; *Poisoning*).
- records coded to Y85 *Sequelae of transport accidents* (60 deaths). This category is for use if a death was due to a condition that was reported as being a sequela of an an *Unintentional transport crash*, or a late effect occurring 1 year or more after the originating event.
- deaths coded as being due to *Intentional self-harm* (98 deaths) or *Assault* (21 deaths) by crashing a motor vehicle, and those involving crashing a motor vehicle but where it could not be determined whether the death was unintentional or was due to *Intentional self-harm* or *Assault* (37 deaths).

Coding of deaths data

The ABS mortality data files result from a process in which the ABS obtains data from state and territory death registers which, in turn, obtain information from the doctor or coroner who certifies each death, and from a relative or other person who knew the deceased person. The ABS codes *Causes of death* according to the 10th revision of the International Classification of Diseases (ICD-10).

If a death was due to an injury, the ICD-10 requires coding of the 'external cause' of the injury, such as a car crash of a particular type. Most injury deaths, including almost all deaths due to road injury, are certified by a coroner. For these cases, the ABS seeks additional information required to code external causes, using the National Coronial Information System (NCIS), a national electronic repository of data on coroner cases. The result of this process is a record in an annual ABS mortality data file that summarises characteristics of the person who died (for example, age, sex and Indigenous status) and characteristics of his or her death (for example, causes and date).

Certain aspects of the method used by the ABS have differed according to the registration year of deaths during the period covered by this project. Reasons for making the changes,

and their nature, have been reported by the ABS (ABS 2009a). Detailed information on changes to deaths registration data implemented by the ABS are available in previously published AIHW reports (AIHW: Harrison & Henley 2015; AIHW: Henley & Harrison 2015).

Serious injury data

National hospital separations data were provided by the Australian Institute of Health and Welfare (AIHW) National Hospital Morbidity Database (NHMD). The NHMD is a compilation of episode-level records from admitted patient morbidity data collection systems in Australian public and private hospitals.

A *Separation* is the process by which an episode of care for an admitted patient ceases. A separation may be *formal* or *statistical*:

- *Formal separation* is the administrative process by which a hospital records the cessation of treatment and/or care and/or accommodation of a patient.
- *Statistical separation* is the administrative process by which a hospital records the cessation of an episode of care for a patient within the 1 hospital stay (METeOR identifier: 327268).

Admission is the process whereby the hospital accepts responsibility for the patient's care and/or treatment. Admission follows a clinical decision based upon specified criteria that a patient requires same-day or overnight care or treatment. An admission may be *formal* or *statistical*:

- *Formal admission* is the administrative process by which a hospital records the commencement of treatment and/or care and/or accommodation of a patient.
- *Statistical admission* is the administrative process by which a hospital records the commencement of a new episode of care, with a new care type, for a patient within 1 hospital stay (METEoR identifier: 327206).

Serious injury is defined for this report as an injury which results in the person being admitted to hospital, and subsequently discharged alive—either on the same day or after 1 or more nights' stay in a hospital bed (in other words, deaths in hospital were excluded).

Records that meet all of the following criteria were included in this report:

- separation from an Australian hospital occurred between 1 July 2010 and 30 June 2015
- the *Principal diagnosis* is any code in ICD-10-AM Chapter XIX *Injury, poisoning and certain other consequences of external causes* codes (S00–T98)
- the *First-reported external cause of morbidity* is any code in the 'Transport accidents' section of Chapter XX *External causes of morbidity and mortality* of ICD-10-AM (V00–V99)
- the *Mode of admission* field has any value except one indicating that transfer from another acute-care hospital had occurred
- the *Mode of separation* field has any value except one indicating that the person died while in hospital
- the *Place of usual residence* is recorded as the Northern Territory, Western Australia, South Australia, Queensland or New South Wales
- *Indigenous status* is recorded as Indigenous or non-Indigenous (that is, records are excluded if Indigenous status is not stated).

Use of these criteria selected 195,318 records, which is the estimated number of unintentional serious injury cases due to transport in the study period.

Diagnoses and external causes of injury during the study period were coded according to the seventh and eighth editions of ICD-10-AM (NCCH 2010, 2013). Separations in which the mode of admission is recorded as being by *Transfer from another acute-care hospital* were omitted on the grounds that such cases are likely to result in 2 or more separation records for the same injury, which can lead to an over-estimation of injury cases. However, the bed-days reported in these separation records were included when calculating total patient days related to serious transport injury (Table 4.2.1). Separations ending in death were also excluded—to reduce multiple counting—on the grounds that these cases should be included in the ABS *Cause of death* data.

Table 4.1.1 includes all separations where the *First-reported external cause* code is classified to any ICD-10 external cause code (that is, V01–Y98), rather than restricted to the transportation code range (V01–V99) used in the remainder of the report.

Certain types of NHMD separation records are not included if *Transport* is mentioned but:

- the *First-reported external cause* code is in the range V00–V99 but the *Principal diagnosis code* is not from the ICD injury chapter (S00–T98): 31,556 separation records including 1,260 for Indigenous Australians. For Indigenous persons, the most common *Principal diagnosis* codes were *Examination and observation following transport accident* (Z04.1, 317 records); *Care involving use of rehabilitation procedure, unspecified* (Z50.9, 254 records); and *Cellulitis of the lower limb* (L03.11, 60 records). For non-Indigenous Australians, the most common *Principal diagnosis* codes were *Care involving use of rehabilitation procedure, unspecified* (Z50.9, 14,687 records); *Examination and observation following transport accident* (Z04.1, 4,465 records); *Examination and observation following other accident* (Z04.3*,* 754 records*)*; *Syncope and collapse* (R55*,* 699 records); *and Cellulitis of lower limb* (L03.11, 542 records). These records were excluded because the main reason for the episode in hospital was not coded as being an injury.
- an external cause code in the range V00–V99 appears as an additional code, but not as the *First-reported external cause* code (1,203 separation records, including 87 for Indigenous Australians). These were excluded on the grounds that *Transport injury* was not recorded as being the main reason for the episode in hospital.
- cases coded as being due to *Intentional self-harm* (275 records) or *Assault* (79 records) by crashing a motor vehicle; as well as those involving crashing a motor vehicle where it could not be determined whether the injury was *Unintentional* or due to *Intentional self-harm* or *Assault* (2 records).

Indigenous status

While the identification of Indigenous Australians in deaths data is incomplete in all state and territory registration systems, 5 jurisdictions (New South Wales, Queensland, Western Australia, South Australia and the Northern Territory) have been assessed by the ABS and the AIHW as having adequate identification from at least 2001 onwards (AIHW 2014). Trends data in this report in relation to Indigenous Australians are presented from 2010–11 to 2014–15 and only include data for the 5 jurisdictions listed above. Mortality data for these 5 jurisdictions should not be assumed to represent the experience in other jurisdictions.

Indigenous status in deaths data

The extent of under-identification of Indigenous deaths in death registrations was estimated in the ABS Census Data Enhancement Indigenous Mortality Quality Study, by linking 2011 Census data with deaths registered from 10 August 2011 to 27 September 2012 (ABS 2013b) Indigenous status as recorded in the 2 collections was compared, and identification rates were calculated by comparing the number of deaths according to death registrations with the expected number of Indigenous deaths as determined by the Census. Identification rates and their reciprocals are shown in Table A1. Identification rates were less than 1.0, indicating under-identification of Indigenous deaths in death registrations, for New South Wales, Queensland, Western Australia and also for the group that includes the other jurisdictions (notably, in the present context, South Australia and Victoria). The opposite is seen for the Northern Territory, indicating an over-representation of Indigenous deaths in death registrations relative to the Census.

Table A1: Indigenous deaths identification rates, by state and territory, Australia, August 2011 to September 2012

State or territory	Identification rate[(a)]	Adjustment factor[(b)]
New South Wales	0.70	1.42
Queensland	0.80	1.24
Western Australia	0.88	1.14
Northern Territory	1.04	0.96
Other states/territories	0.40	2.49
Australia[(c)]	0.72	1.39

(a) Calculated by dividing the number of Indigenous death registrations by the expected number of deaths as determined by the Census.

(b) Calculated as the reciprocal of the identification rate.

(c) Includes all states and territories.

Note: Deaths registered 10 August 2011 to 27 September 2012.

Source: Life tables for Aboriginal and Torres Strait Islander Australians, 2010–2012. ABS cat. no. 3302.0.55.003.

Weighting of fatal injury cases

In principle, fatal injury cases values presented in this report could be weighted to allow for imperfect identification of Indigenous status in the data sources used for this report. Weighting has not been applied, for reasons given here.

First, the implied coverage estimates are for deaths from all causes. The deaths that are due to transport differ from most deaths in the way data are collected, which might affect Indigenous identification: most deaths are certified by a doctor while nearly all transport deaths are reported by police to a coroner. Second, the 2 available sets of coverage estimates refer to the period 2002 to 2006, and to 2006–07, whereas this report covers the period to 2014–15, for which coverage may be different. Third, coverage estimates are not available by remoteness area, which is an important variable for this report. Taken together, these considerations cast doubt on the reliability of the available coverage estimates as weighting factors for the fatal transport injuries reported here.

Indigenous status in hospitalisations data

In 2010, the AIHW recommended that '*New South Wales and Victorian hospitalisations for Indigenous people (both public and private hospitals) be included in comparative analyses in national reporting, commencing with data collected in 2004–05'* (AIHW 2010). Until then, the

Northern Territory, Western Australia, South Australia and Queensland were the only jurisdictions considered to have a level of Indigenous identification sufficient for reporting purposes.

The audit of 2007–08 cases presented in that report found that the percentage of Indigenous people whose hospital admission records correctly identified them as being Indigenous in these 6 jurisdictions ranged from 84% for Victoria to 98% for the Northern Territory and Western Australia (Table A2). These 6 jurisdictions account for 98% of national hospital separations reported as being for Aboriginal and Torres Strait Islander people and 96% of national hospital separations. Similarly, they account for 96% of the Aboriginal and Torres Strait Islander population of Australia and 96% of the Australian population. The same publication advises caution in time series analyses for these 6 jurisdictions, recommending that findings should include a caveat about the possible contribution to changes in hospitalisation rates for Aboriginal and Torres Strait Islander people of changes in ascertainment of Indigenous status for Aboriginal and Torres Strait Islander patients (AIHW 2010).

The report of a more recent study of Indigenous identification in administrative records of hospitalisations in public hospitals in Australia was published in May 2013 (AIHW 2013). The study was conducted in 2011 and 2012. The report advises that 'Data for all states and territories may be used for analysis of hospitalisations by Indigenous status. All data that are reported should be accompanied by appropriate data quality information based on the study reported in this publication.'

Table A2: Indigenous identification in hospital separations data(a)

Jurisdiction	Correctly recorded as Indigenous (%)(b)
New South Wales	93
Victoria	84
Queensland	88
Western Australia	98
South Australia	93
Northern Territory	98

(a) *Source:* AIHW 2010, Table 4.1. Studies conducted between 2006 and 2008.

(b) Proportion of Indigenous people correctly identified as such in the admission records.

Weighting of serious injury cases

As with fatal injury, values for serious injury cases presented in this report could be weighted to allow for imperfect identification of Indigenous status in the data sources used for this report. Weighting has not been applied here.

The latest AIHW report on Indigenous identification in hospitals data recommends application of correction factors for data years commencing with 2010–11, and not for data at the diagnosis level (AIHW 2013). The applicability of the available factors to injury data is not known.

Indigenous and non-Indigenous cases

Fatal and serious injury records for people identified as Indigenous in the data sources were compared with non-Indigenous Australians in the data for the same jurisdictions. Those whose Indigenous status was not stated are not included. It has been reported by the AIHW

that the proportion of ‘not stated’ cases in the NHMD is small and the demographic profile of these cases is similar to that of non-Indigenous cases (AIHW 2010).

Under-counting of Indigenous fatal cases and non-fatal serious injury cases because of incomplete Indigenous identification is likely to result in over-estimation of non-Indigenous cases. This is because Aboriginal and Torres Strait Islander people will be incorrectly recorded as non-Indigenous or have Indigenous status ‘not stated’. The size of this error is unknown; however, it has been speculated that the ascertainment of Indigenous status may be better in areas where Indigenous Australians comprise a relatively large proportion of the population, such as *Very remote* areas (AIHW 2007).

Definitions of transport injury and related terms

Transport injury

Transport injury includes fatal injuries with an *Underlying cause of death* code classified to ICD-10 external cause codes in the range V01–V99; and non-fatal serious injuries with a first-reported external cause of morbidity in the ICD-10-AM range V00–V99. These code ranges include the whole of the *Transport accidents* block of ICD-10 and ICD-10-AM.

These code ranges include cases of unintentional injury where the person was, when injured, a pedestrian or was being conveyed by a pedal cycle; motor cycle; 3-wheeled motor vehicle; car; bus; light- or heavy-goods vehicle; tram; train; animal or animal-drawn vehicle; special vehicle used in agriculture, industry or construction; a special all-terrain vehicle; or an unknown means of land transport. Also in-scope are injured occupants of watercraft, aircraft and spacecraft.

Transport injury cases are the subject of Chapter 2 and tables 4.1.2 and 4.1.3 in this report.

Land transport

Land transport includes all of the modes of transport listed above, except watercraft, aircraft and spacecraft. The corresponding code ranges are ICD-10 V01–V89 for *Fatal injuries* and ICD-10-AM V00–V89 for *Serious injuries*.

These code ranges include traffic cases (those occurring at least partly on a public road); non-traffic cases; and cases unspecified as to whether they are traffic or non-traffic. They include occupants of vehicles (drivers/passengers) as well as persons on the outside and persons boarding or alighting from vehicles.

Land transport cases are the subject of Chapter 3 and the tables and figures in Section 4.2.

Modes of transport and types of vehicle occupant

Mode of transport refers to the type of transport the injured person was travelling in or on at the time of injury. Being a pedestrian is included as a mode of transport.

Car, as defined in the ICD-10, refers to any 4-wheeled passenger vehicle designed to carry up to 10 people and not requiring a special driver’s licence. *Motorcycle* refers to 2-wheeled motor vehicles (including motor-cycles with a side-car). A *Pedal cycle* is any land transport vehicle operated solely by pedals. *Pedestrian* includes people on foot and users of pedestrian conveyances, such as skateboards and wheelchairs.

The number of Indigenous cases involving some modes of transport was too small to allow their inclusion in some parts of the analysis. Figures 4.2.2 to 4.2.4, 4.2.7 to 4.2.12, 4.2.14

and 4.2.15 report only the 4 most frequently reported modes of transport (that is, *Car*, *Motorcycle*, *Pedal cycle* and *Pedestrian*). Car occupant cases were sufficiently frequent to allow them to be split into car drivers and car passengers. A car *driver* is an occupant of a car who is operating or intending to operate it and a car *passenger* is any occupant other than the driver or a person on the outside of the car. A person occupying a space intended for the transport of property is included as a passenger. Tables 4.2.10 and 4.2.11 include only car occupants.

Data for other land transport vehicles such as buses, trains, trams, heavy transport vehicles, industrial vehicles and other special-purpose vehicles have not been included in these tables and figures, due to the small number of cases (particularly fatal cases) for Indigenous people. However, overall numbers of cases involving these types of vehicles are shown in tables 4.1.2 and 4.1.3, except where suppressed due to the smallness of the total.

Population data and the calculation of rates

Rates for Aboriginal and Torres Strait Islander people were calculated using as denominators values from ABS Series B experimental population estimates and projections of the Indigenous population, based on the 2011 Census (ABS 2014). For mortality data, denominators were restricted to persons usually residing in New South Wales, Queensland, South Australia, Western Australia and the Northern Territory.

Population estimates for non-Indigenous Australians were obtained by subtracting Indigenous population estimates from corresponding estimates of the usually resident population, supplied by the ABS to the AIHW as an unpublished file.

To reduce the impact of small case numbers, case data were cumulated (except in the section presenting trends) for the whole 5-year period ending 30 June 2015. Corresponding population denominators were calculated by linear interpolation of adjacent estimates for 30 June to obtain estimates for 31 December, then adding values for the 5 years 2010 to 2015, inclusive.

Remoteness of residence

Numerator data for fatal injury were based on the ASGS classification for all 5 years over the period from 2010–11 to 2014–15, while numerator data for serious injury were based on the ASGC classification for the period from 2010–11 to 2011–12 and the ASGS classification for the period from 2012–13 to 2014–15.

Total ASGS-based population estimates for 2010–11 to 2014–15 were derived using population data supplied by the AIHW. ASGC-based population estimates were only available for June 2010 and June 2011, which were used to calculate population estimates for December 2010. Both ASGC-based and ASGS-based estimates were available for June 2011 and were used as a template to estimate an ASGC population for June 2012 and hence calculate ASGC-based population estimates for December 2011.

Projected Indigenous ASGS-based population estimates by remoteness areas, based on the 2011 Census, for the years covered in this report are available on the ABS website (ABS 2014). However, for 2012 to 2015, June estimates for *Inner regional* and *Outer regional* areas were combined as were the estimates for the *Remote* and *Very remote* areas. Indigenous population estimates for June 2011 were provided for all 5 remoteness zones and were used as a basis for estimating separate populations for *Inner regional* and *Outer regional* areas, as well as for *Remote* and *Very remote* areas, for 2012 to 2015 (ABS 2013a).

Indigenous ASGC-based population estimates by remoteness area, based on the 2006 Census, for years 2010 to 2012, are available on the ABS website (ABS 2009b). As with ASGS-based estimates, June estimates for *Inner regional* and *Outer regional* areas were combined, as were the estimates for *Remote* and *Very remote* areas. Indigenous population estimates for June 2006 were provided for all 5 remoteness zones and were used as a basis for estimating separate populations for *Inner regional* and *Outer regional* areas, as well as for *Remote* and *Very remote* areas, for 2010 to 2012 (ABS 2008).

Corresponding populations of non-Indigenous Australians were calculated as stated above.

Analysis of trend

The ABS Series B estimates and projections of the Indigenous population were also used to provide annual denominators for analysis of trends in rates (ABS 2014). Corresponding populations of non-Indigenous Australians were calculated as described above.

Rates were age-standardised by the direct method, using the Australian population in 2001 as the standard (ABS 2002). Age-standardised rates and 95% confidence intervals were calculated in Stata version 14.2 statistical software using the –dstdize- command. Estimated trends in age-standardised rates were reported as average annual percentage changes obtained using negative binomial regression modelling performed in Stata.

Quantifying variability

The data presented in this report are subject to 2 types of statistical error, non-random and random. (A third type of statistical error—sampling error—does not apply here, because none of the data sources used involved probability sampling.)

Non-random error: Some amount of non-random error is to be expected in administrative data collections, such as the NHMD on which this report relies. For example, non-random error could occur if the approach to assigning cause codes to cases were to differ systematically between jurisdictions or over time. Systems are in place to encourage uniform data collection and coding, and scrutiny of data during analysis includes checking for patterns that might reflect non-random error. Nevertheless, some non-random error is likely to remain.

Random error: The values presented in the report are subject to random error, or variation. Variation is relatively large when the case count is small (especially if less than about 10) and small enough to be unimportant in most circumstances when the case count is larger (that is, more than a few tens of cases).

Some of the topics for which results are reported compare groups that vary widely in case count, largely due to differences in population size (for example, the population of New South Wales is more than 30 times as large as the Northern Territory population and the population of the *Major cities* remoteness area is nearly 90 times that of *Very remote* Australia). In this situation, year-to-year changes in counts or rates for the smaller population groups may be subject to large random variation. There is potential to misinterpret such fluctuations as meaningful rises or falls in occurrence.

In this situation, and similar ones, guidance is provided to readers concerning how much variation of values can be expected, due to random variation of small counts. Confidence intervals (CIs) are calculated for this purpose. In this report, CIs were calculated using the Stata –dstdize- command (CIs around single estimates) and the –nbreg- command (CIs around slope of trend) (Statacorp 2017).

Classification of remoteness area

Australian Standard Geographical Classification (ASGC)

Australia can be divided into several regions based on their distance from urban centres, which is considered to determine the range and types of services available. In this report, 'remoteness area' refers to the remoteness classification of 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.

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 for 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 remoteness 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 1 or other of the remoteness areas present in it, in proportion to the resident population of that SLA in each of the remoteness areas.

Australian Statistical Geography Standard (ASGS)

The ASGS is a hierarchical classification system of geographical regions and consists of a number of interrelated structures. The ASGS brings all the regions for which the Australian Bureau of Statistics (ABS) publishes statistics within a single framework, and has been used by the ABS for the collection and dissemination of geographically classified statistics from July 2011 onwards. It provides a common framework of statistical geography and enables the production of statistics which are comparable and can be spatially integrated.

Australian Statistical Geography Standard (ASGS) volume 1—main structure and greater capital city statistical areas (Cat. no. 1270.0.55.001), is the first in a series of volumes that details the various structures and regions of the ASGS. Its purpose is to outline the conceptual basis of the regions of the main structure and the greater capital city statistical areas and their relationship to each other. This publication contains several elements, including the ASGS manual, maps, codes and names and the digital boundaries current for the ASGS edition 2011 (date of effect 1 July 2011). The digital boundaries for Volume 1 of the ASGS are the spatial units for the main structure and the greater capital city statistical areas. These spatial units are:

- Mesh Blocks (MB)
- Statistical Area Level 1 (SA1)
- Statistical Area Level 2 (SA2)

- Statistical Area Level 3 (SA3)
- Statistical Area Level 4 (SA4)
- Greater Capital City Statistical Areas (GCCSA)
- State and territory (S/T).

Each case is allocated to 1 of 5 remoteness areas on the basis of the admitted patient's place of usual residence according to Statistical Area Level 2 (SA2). Most SA2s lie entirely within 1 of the 5 areas. If this was so for all SA2s, then each record could simply be assigned to the area in which its SA2 lies. However, some SA2s overlap 2 or more of the areas. Records with these SA2s were assigned randomly to remoteness areas in proportion to the area-specific distribution of the resident population of the SA2 according to the 2011 Census. For hospitalisations, each record in the set having a particular SA2 code was assigned to 1 or other of the areas probabilistically according to the 2016 Census, in proportion to the resident population of that SA2. The resulting values are integers. A SA2-to-remoteness area map can be found in ABS cat. no. 1270.0.55.006.

Appendix B: Table data

Rates for figures for which data are not presented in the body of the report

Table B1: Age-specific rates of serious land transport traffic injury rates, by case type, by Indigenous status, by sex, 2010–11 to 2014–15

	Age-specific rate 100,000 population									
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Males						**Males**					
0–4	0.5	27.6	1.6	6.4	22.3	0–4	0.1	10.3	0.8	5.8	5.2
5–9	0.0	25.7	12.6	36.0	21.3	5–9	0.1	15.2	7.4	27.5	12.3
10–14	9.6	43.1	61.8	60.1	25.5	10–14	0.7	15.2	24.8	61.9	13.7
15–19	74.1	103.5	137.0	54.7	40.6	15–19	76.4	47.7	108.5	53.4	21.5
20–24	115.6	84.6	125.2	31.0	35.1	20–24	91.3	37.7	137.9	34.6	17.2
25–29	111.0	77.7	75.1	37.6	70.9	25–29	69.6	20.7	103.5	34.2	13.5
30–34	111.9	58.6	81.6	39.7	46.0	30–34	61.0	14.4	90.8	42.5	11.4
35–39	108.7	65.9	67.1	34.7	84.4	35–39	56.0	11.6	89.6	49.4	10.4
40–44	85.3	51.2	56.8	50.0	47.7	40–44	52.1	8.4	85.6	52.4	9.4
45–49	74.8	37.4	42.7	21.4	70.8	45–49	47.7	8.0	84.3	51.6	8.4
50–54	49.6	31.0	35.7	40.3	55.8	50–54	43.2	7.9	74.2	42.9	8.6
55–59	45.7	35.8	41.8	21.9	47.7	55–59	45.2	6.1	63.3	39.4	8.2
60–64	54.5	20.1	11.5	17.2	37.3	60–64	45.1	6.2	41.1	35.9	9.6
65+	70.1	20.6	14.4	16.5	10.3	65+	62.7	10.2	16.1	20.6	16.6
All ages[(a)]	**67.0**	**48.5**	**54.2**	**33.3**	**42.7**	**All ages**[(a)]	**47.8**	**15.7**	**64.8**	**38.8**	**12.3**

(continued)

Table B1 (continued): Age-specific rates of serious land transport traffic injury rates, by case type, by Indigenous status, by sex, 2010–11 to 2014–15

	Age-specific rate per 100,000 population										
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Females						**Females**					
0–4	0.0	28.8	1.1	3.9	8.3	0–4	0.1	10.6	0.5	2.5	3.7
5–9	0.6	31.8	5.1	22.7	11.3	5–9	0.2	16.3	1.9	13.1	6.0
10–14	3.5	34.8	13.0	20.6	10.0	10–14	0.3	18.7	3.7	13.0	9.8
15–19	45.4	102.6	10.0	8.1	24.3	15–19	68.8	57.3	11.5	6.3	12.1
20–24	75.2	74.5	10.1	2.9	23.1	20–24	82.1	34.4	13.4	8.3	10.6
25–29	87.2	73.5	8.5	6.0	17.9	25–29	61.5	25.4	11.8	10.1	7.9
30–34	67.0	54.6	5.2	6.2	40.2	30–34	52.0	16.8	8.9	10.6	5.5
35–39	54.4	69.6	5.4	9.8	34.8	35–39	46.0	12.4	10.2	9.6	5.9
40–44	48.8	53.0	5.2	6.2	30.1	40–44	46.4	12.7	8.8	11.7	6.1
45–49	45.3	39.2	11.0	6.1	23.3	45–49	44.8	13.9	11.2	12.3	4.5
50–54	55.8	44.3	4.3	8.6	21.4	50–54	45.7	16.3	10.4	15.0	6.7
55–59	43.4	20.7	3.8	1.9	24.5	55–59	45.3	17.0	8.3	13.2	8.0
60–64	36.3	44.1	10.4	0.0	15.6	60–64	41.9	18.2	4.4	11.8	7.7
65+	36.3	8.3	1.7	0.0	13.2	65+	44.9	30.1	1.2	4.1	16.3
All ages[(a)]	**43.0**	**47.2**	**6.4**	**7.3**	**21.2**	**All ages**[(a)]	**41.8**	**22.0**	**7.3**	**9.7**	**8.3**

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

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Table B2: Age-specific rates of serious land transport non-traffic injury rates, by case type, by Indigenous status, by sex, 2010–11 to 2014–15

	Age-specific rate per 100,000 population									
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Males						**Males**					
0–4	0.0	2.7	6.4	19.1	22.8	0–4	0.0	1.4	3.6	19.7	6.5
5–9	0.0	6.6	24.0	54.6	7.6	5–9	0.1	1.6	30.7	48.1	4.4
10–14	1.1	5.7	99.8	77.2	6.8	10–14	0.9	1.7	91.2	89.1	4.1
15–19	7.6	11.8	123.5	50.0	5.3	15–19	7.0	6.1	136.1	58.2	3.6
20–24	6.2	4.8	108.7	15.8	0.7	20–24	6.1	4.0	107.5	23.8	3.3
25–29	6.8	1.7	64.9	17.9	6.0	25–29	4.6	2.8	65.4	19.3	2.9
30–34	4.2	5.2	68.0	15.7	6.3	30–34	5.2	1.9	54.4	22.4	2.3
35–39	8.1	9.3	43.9	15.0	2.3	35–39	3.3	1.3	54.2	26.0	2.8
40–44	6.8	4.5	30.7	20.5	2.3	40–44	3.6	1.2	49.6	26.5	2.8
45–49	8.0	2.7	32.1	14.7	8.0	45–49	3.9	1.1	40.2	23.5	2.3
50–54	6.2	6.2	18.6	6.2	1.6	50–54	3.2	1.3	28.0	19.7	2.9
55–59	6.0	8.0	11.9	6.0	15.9	55–59	2.5	0.8	16.7	15.9	3.0
60–64	0.0	0.0	2.9	5.7	2.9	60–64	2.3	1.0	10.4	12.9	3.3
65+	6.2	2.1	4.1	0.0	2.1	65+	5.5	1.8	6.0	7.9	5.2
All ages[(a)]	**5.0**	**5.0**	**45.3**	**22.2**	**6.1**	**All ages**[(a)]	**3.6**	**2.0**	**49.0**	**28.9**	**3.6**

(continued)

Table B2 (continued): Age-specific rates of serious land transport non-traffic injury rates, by case type, by Indigenous status, by sex, 2010–11 to 2014–15

	Age-specific rate per 100,000 population										
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Females						**Females**					
0–4	0.0	4.4	3.3	12.8	12.8	0–4	0.0	1.1	1.3	8.2	4.3
5–9	0.0	2.8	5.7	4.5	4.5	5–9	0.2	1.1	6.9	24.1	2.0
10–14	0.0	4.1	12.4	0.6	0.6	10–14	0.6	1.7	12.5	17.8	1.2
15–19	7.5	4.4	11.2	3.1	3.1	15–19	3.8	4.5	13.9	4.2	1.2
20–24	8.0	5.1	5.8	2.9	2.9	20–24	3.6	2.4	8.3	3.0	2.1
25–29	1.7	4.3	11.1	2.6	2.6	25–29	1.8	1.1	4.9	3.4	1.4
30–34	2.1	4.1	3.1	8.2	8.2	30–34	2.4	1.2	3.9	4.8	1.3
35–39	4.4	0.0	4.4	8.7	8.7	35–39	1.8	0.9	4.0	4.7	1.4
40–44	5.2	4.2	2.1	3.1	3.1	40–44	1.4	0.6	2.8	4.9	1.5
45–49	2.4	7.3	2.4	3.7	3.7	45–49	1.5	0.9	3.1	5.3	1.9
50–54	7.1	0.0	0.0	4.3	4.3	50–54	1.6	1.0	3.1	5.4	2.1
55–59	0.0	1.9	1.9	0.0	0.0	55–59	1.6	1.2	1.6	6.2	2.4
60–64	2.6	5.2	0.0	5.2	5.2	60–64	2.0	1.2	1.1	6.2	3.2
65+	3.3	0.0	0.0	3.3	3.3	65+	4.3	2.7	0.9	2.3	7.8
All ages[(a)]	**3.2**	**3.2**	**4.4**	**6.1**	**4.5**	**All ages**[(a)]	**2.0**	**1.6**	**4.8**	**6.9**	**2.7**

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

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Table B3: Age-specific rates of serious injury, by case type, by Indigenous status, by sex: residents of Major cities, 2010–11 to 2014–15

	Age-specific rate per 100,000 population										
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Males						**Males**					
0–4	0.0	27.7	6.2	29.2	29.2	0–4	0.1	8.6	2.4	24.0	11.9
5–9	0.0	14.5	19.4	87.1	38.7	5–9	0.1	15.3	19.6	65.9	18.4
10–14	3.3	27.8	109.6	145.5	45.8	10–14	0.8	13.9	57.0	133.5	20.5
15–19	57.5	67.1	252.3	137.3	63.9	15–19	60.9	41.5	153.3	97.5	28.2
20–24	99.3	45.1	218.4	59.6	37.9	20–24	77.0	32.5	181.5	56.7	22.5
25–29	89.8	40.2	134.7	75.6	80.4	25–29	61.5	18.5	133.4	56.4	17.8
30–34	121.5	31.2	143.4	62.3	37.4	30–34	55.4	12.9	116.5	70.4	14.9
35–39	84.7	31.8	109.5	60.0	67.1	35–39	49.5	10.5	113.7	84.2	15.6
40–44	66.5	28.0	87.5	122.4	52.5	40–44	46.9	8.2	112.0	88.4	14.6
45–49	49.8	20.7	78.8	78.8	70.5	45–49	48.1	6.8	108.7	86.2	12.9
50–54	43.5	19.3	53.2	87.0	43.5	50–54	42.1	8.7	89.9	74.0	14.2
55–59	38.6	32.1	57.8	57.8	32.1	55–59	45.0	6.2	71.7	64.7	13.7
60–64	17.9	0.0	8.9	44.7	53.7	60–64	44.5	7.0	44.4	54.3	16.7
65+	52.5	0.0	32.8	26.3	26.3	65+	67.2	12.3	17.5	31.4	28.8
All ages[(a)]	**53.9**	**26.7**	**93.9**	**75.4**	**47.7**	**All ages**[(a)]	**44.3**	**14.6**	**85.5**	**69.3**	**18.6**

(continued)

Table B3 (continued): Age-specific rates of serious injury, by case type, by Indigenous status, by sex: residents of Major cities, 2010–11 to 2014–15

	Age-specific rate per 100,000 population										
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Females						**Females**					
0–4	0.0	25.3	0.0	11.1	20.5	0–4	0.1	8.9	0.8	9.7	7.8
5–9	0.0	21.8	6.7	36.9	21.8	5–9	0.2	15.2	4.6	32.6	8.4
10–14	0.0	23.8	10.2	37.4	18.7	10–14	0.6	16.8	9.0	25.9	12.5
15–19	52.6	72.3	21.4	13.2	47.7	15–19	50.9	50.9	17.2	9.4	16.5
20–24	74.1	55.5	11.1	3.7	16.7	20–24	73.0	30.0	16.5	12.0	14.5
25–29	95.6	41.0	15.9	13.7	18.2	25–29	56.1	23.9	14.8	14.2	10.6
30–34	70.0	35.0	5.8	20.4	29.1	30–34	50.3	16.4	10.0	16.3	8.2
35–39	62.4	43.7	9.4	12.5	37.5	35–39	42.7	13.0	11.6	15.0	8.5
40–44	38.8	26.9	9.0	6.0	26.9	40–44	43.4	12.5	10.4	17.6	9.5
45–49	56.1	45.6	10.5	21.0	28.0	45–49	45.3	14.7	11.3	19.1	8.1
50–54	50.9	33.9	0.0	8.5	12.7	50–54	46.1	17.6	10.9	21.6	11.1
55–59	38.8	11.1	0.0	0.0	27.7	55–59	46.5	18.2	9.0	20.3	12.3
60–64	15.1	22.7	15.1	0.0	22.7	60–64	42.8	21.7	4.7	19.0	13.7
65+	34.3	0.0	4.9	0.0	34.3	65+	47.2	33.4	2.0	6.3	30.8
All ages[(a)]	**42.9**	**31.6**	**8.4**	**13.1**	**26.6**	**All ages**[(a)]	**39.4**	**21.5**	**9.2**	**16.4**	**13.3**

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

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Table B4: Age-specific rates of serious injury, by case type, by Indigenous status, by sex: residents of Inner and outer regional areas, 2010–11 to 2014–15

	Age-specific rate per 100,000 population										
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Males						**Males**					
0–4	0.0	26.5	10.8	21.7	48.2	0–4	0.2	18.7	9.5	31.1	15.5
5–9	0.0	29.0	34.0	87.0	32.8	5–9	0.4	19.7	80.5	99.6	15.4
10–14	10.3	32.1	178.5	143.8	32.1	10–14	3.2	22.7	236.9	196.1	18.6
15–19	95.6	103.8	274.6	91.5	34.2	15–19	133.3	81.3	462.1	151.8	26.5
20–24	121.7	82.3	257.7	44.7	53.7	20–24	158.5	66.6	437.1	67.6	23.0
25–29	115.4	77.7	135.4	40.0	73.2	25–29	116.7	35.5	285.6	46.9	20.0
30–34	109.2	29.3	162.4	74.6	50.6	30–34	102.6	26.1	242.4	53.5	16.6
35–39	102.6	45.6	133.9	48.4	54.1	35–39	86.8	18.0	235.2	56.4	13.3
40–44	80.3	30.5	88.6	55.4	22.1	40–44	77.8	12.7	195.9	61.8	12.0
45–49	79.7	31.9	79.7	25.5	79.7	45–49	60.2	13.4	164.4	53.1	9.5
50–54	75.5	36.0	53.9	28.8	50.3	50–54	54.4	9.4	132.3	42.1	10.1
55–59	56.4	42.3	56.4	23.5	56.4	55–59	51.4	7.8	97.6	40.4	9.7
60–64	87.0	26.8	20.1	26.8	26.8	60–64	52.8	7.1	65.3	40.8	11.7
65+	113.3	33.0	9.4	18.9	14.2	65+	70.4	10.8	31.1	26.3	16.0
All ages[(a)]	**77.6**	**44.5**	**105.2**	**51.8**	**43.5**	**All ages**[(a)]	**70.6**	**24.8**	**188.4**	**67.9**	**15.8**

(continued)

Table B4 (continued): Age-specific rates of serious injury by case type, by Indigenous status, by sex: residents of Inner and outer regional areas, 2010–11 to 2014–15

	Age-specific rate per 100,000 population										
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Females						**Females**					
0–4	0.0	30.0	10.8	25.2	14.6	0–4	0.2	19.1	4.3	15.0	10.8
5–9	0.0	34.6	11.1	61.8	8.4	5–9	0.6	22.5	17.8	50.3	9.3
10–14	0.0	40.5	21.5	38.0	4.2	10–14	1.2	28.2	30.0	41.3	11.1
15–19	54.0	121.9	15.2	8.3	11.5	15–19	126.2	85.9	40.8	14.7	10.0
20–24	104.7	75.3	11.0	5.5	15.2	20–24	124.4	54.4	36.6	9.9	12.1
25–29	73.2	64.3	20.0	4.4	11.9	25–29	84.1	32.9	20.9	11.2	8.5
30–34	72.1	43.8	18.0	10.3	27.2	30–34	68.2	22.0	21.2	12.5	5.7
35–39	51.8	54.4	15.5	10.4	21.5	35–39	62.2	13.6	21.2	12.7	5.7
40–44	57.1	47.2	5.0	7.4	15.1	40–44	59.5	14.9	14.6	14.1	5.9
45–49	34.1	25.5	17.0	2.8	7.7	45–49	48.8	14.8	20.9	15.3	4.6
50–54	55.0	22.7	9.7	13.0	22.1	50–54	49.3	16.0	19.1	19.5	7.3
55–59	47.8	17.4	13.0	0.0	4.2	55–59	46.8	18.0	14.0	18.9	9.4
60–64	53.4	41.5	11.9	0.0	12.3	60–64	45.5	14.5	7.2	17.3	9.9
65+	52.5	11.3	0.0	0.0	5.6	65+	53.3	31.6	2.6	7.5	17.2
All ages[(a)]	**47.3**	**43.9**	**12.2**	**13.1**	**23.6**	**All ages**[(a)]	**55.6**	**28.3**	**18.9**	**17.9**	**9.5**

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

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Table B5: Age-specific rates of serious injury, by case type, by Indigenous status, by sex: residents of Remote and very remote areas, 2010–11 to 2014–15

	Age-specific rate per 100,000 population									
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Males						**Males**					
0–4	2.5	42.1	5.0	37.1	94.1	0–4	0.0	27.3	9.6	32.1	25.7
5–9	0.0	64.5	71.7	114.7	16.7	5–9	1.8	26.8	116.0	128.5	19.6
10–14	24.1	117.9	227.7	117.9	24.1	10–14	2.1	39.0	486.7	246.4	12.3
15–19	97.4	230.2	245.0	79.7	59.0	15–19	252.6	136.7	850.4	171.5	30.1
20–24	154.8	172.3	224.9	29.2	20.4	20–24	168.4	102.1	658.5	54.4	25.5
25–29	152.8	132.9	159.4	53.1	112.9	25–29	91.4	66.5	328.7	38.0	14.2
30–34	110.8	145.2	141.4	19.1	91.7	30–34	82.4	30.4	259.8	33.0	15.2
35–39	177.0	172.7	95.0	34.5	207.2	35–39	80.7	26.4	255.2	34.4	7.9
40–44	143.5	130.4	91.3	21.7	95.6	40–44	69.5	12.6	233.7	29.1	11.4
45–49	129.0	77.4	67.1	0.0	123.8	45–49	49.6	23.5	191.7	41.7	15.6
50–54	37.2	62.1	55.9	24.8	142.8	50–54	59.9	18.7	138.4	32.4	11.2
55–59	60.8	60.8	53.2	0.0	129.2	55–59	71.6	14.0	131.9	26.7	15.4
60–64	45.4	34.1	11.4	11.4	34.1	60–64	47.7	8.5	83.4	35.7	5.1
65+	42.1	33.7	16.9	0.0	16.9	65+	67.6	16.9	63.1	16.9	12.4
All ages[(a)]	**84.9**	**105.3**	**103.6**	**37.9**	**81.4**	**All ages**[(a)]	**75.2**	**39.0**	**267.9**	**64.1**	**15.8**

(continued)

Table B5 (continued): Age-specific rates of serious injury, by case type, by Indigenous status, by sex: residents of Remote and very remote areas, 2010–11 to 2014–15

	Age-specific rate per 100,000 population										
Indigenous Australians	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**	**Non-Indigenous Australians**	**Car driver**	**Car passenger**	**Motorcyclist**	**Pedal cyclist**	**Pedestrian**
Females						**Females**					
0–4	0.0	49.1	0.0	23.3	25.9	0–4	0.0	17.3	5.2	15.5	5.2
5–9	2.5	49.6	19.8	76.9	14.9	5–9	0.0	20.8	37.8	47.2	9.4
10–14	16.7	55.8	61.4	27.9	2.8	10–14	6.7	40.3	85.0	80.6	6.7
15–19	40.9	125.9	34.6	6.3	31.5	15–19	161.1	155.7	169.3	5.5	10.9
20–24	54.1	117.3	30.1	6.0	75.2	20–24	149.7	110.7	88.2	10.3	10.3
25–29	92.7	140.7	25.6	9.6	35.2	25–29	101.8	44.3	50.2	20.7	10.3
30–34	56.5	105.5	0.0	3.8	94.2	30–34	55.6	33.4	44.5	23.8	6.4
35–39	59.0	122.3	0.0	12.7	71.7	35–39	66.3	18.7	34.0	15.3	6.8
40–44	61.0	109.8	8.1	4.1	65.1	40–44	53.2	20.6	25.8	13.7	3.4
45–49	54.9	79.8	10.0	10.0	59.9	45–49	43.1	19.0	36.2	8.6	6.9
50–54	87.2	93.0	0.0	5.8	46.5	50–54	52.2	26.1	22.8	19.6	4.9
55–59	38.4	46.0	0.0	7.7	76.7	55–59	58.1	18.7	16.9	13.1	5.6
60–64	42.9	96.5	0.0	0.0	21.4	60–64	54.8	14.3	14.3	19.0	7.1
65+	20.3	13.6	0.0	0.0	6.8	65+	64.2	33.7	5.4	4.4	26.1
All ages[(a)]	**44.0**	**83.2**	**13.3**	**13.4**	**43.4**	**All ages**[(a)]	**62.4**	**41.3**	**44.4**	**20.5**	**9.6**

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

Note: Data are for New South Wales, Queensland, Western Australia, South Australia and the Northern Territory (see Appendix A).

Source: AIHW National Hospital Morbidity Database.

Appendix C: Subnational vs national comparisons

As outlined in the Appendix A: Data issues of this report, deaths data for 5 jurisdictions (New South Wales, Queensland, Western Australia, South Australia and the Northern Territory) have been assessed by the ABS and AIHW as having adequate Indigenous identification from at least 2001 onwards (AIHW 2014). The body of the report presents subnational statistics for fatal and serious land transport injury using data from these 5 jurisdictions only.

However, data for all states and territories may be used for analysis of hospitalisations by Indigenous status (AIHW 2013). Table C1 provides a comparison of counts and crude rates for the 5 jurisdictions for which fatal land transport injury data are included in the body of the report, and the remaining jurisdictions for which data are not included. The 5 jurisdictions included 93% of the Indigenous land transport injury deaths that would have been reported if data from all 8 jurisdictions had been included in the report. The equivalent proportion for non-Indigenous land transport injury deaths was 73%. Crude rates were broadly similar between 5-jurisdictional data and national data, regardless of Indigenous status.

Table C1: Counts and crude rates for 5-jurisdictional data and national data for fatal land transport injury, by Indigenous status, Australia, 2010–11 to 2014–15

Indigenous status	5 Jurisdictions[a]	Remaining jurisdictions[b]	All jurisdictions	% (5 Jurisdictions)
Indigenous				
Cases	422	31	453	93.2
Population[c]	3,054,750	404,212	3,458,962	88.3
Crude rate[d]	13.8	7.7	13.1	
Non-Indigenous				
Cases	4,569	1,699	6,268	72.9
Population[c]	78,591,327	32,506,581	111,097,908	70.7
Crude rate[d]	5.8	5.2	5.6	

(a) Includes New South Wales, Queensland, South Australia, Western Australia and the Northern Territory.

(b) Includes Victoria, Tasmania, the Australian Capital Territory and Other territories.

(c) Sum of 31 December Estimated resident population for 2010 to 2014.

(d) Rate per 100,000 population.

Note: Case counts are based on state or territory of residence.

Source: AIHW National Mortality Database.

Table C2 provides a comparison of counts and crude rates for the 5 jurisdictions for which serious land transport injury data are included in the body of the report, and the remaining jurisdictions for which data are not included. The 5 jurisdictions included 91% of the Indigenous land transport serious injury cases that would have been reported if data from all 8 jurisdictions had been included in the report. The equivalent figure for non-Indigenous serious land transport injury cases was 71%. Crude rates were broadly similar between 5-jurisdictional data and national data regardless of Indigenous status.

Table C2: Counts and crude rates for 5-jurisdictional data and national data for serious land transport injury, by Indigenous status, Australia, 2010–11 to 2014–15

Indigenous status	5 jurisdictions[a]	Remaining jurisdictions[b]	All jurisdictions	% (5 jurisdictions)
Indigenous				
Cases	9,357	916	10,273	91.1
Population[c]	3,054,750	404,212	3,458,962	88.3
Crude rate[d]	306.3	226.6	297.0	
Non-Indigenous				
Cases	179,967	73,688	253,655	70.9
Population[c]	78,591,327	32,506,581	111,097,908	70.7
Crude rate[d]	229.0	226.7	228.3	

(a) Includes New South Wales, Queensland, South Australia, Western Australia and the Northern Territory.

(b) Includes Victoria, Tasmania, the Australian Capital Territory and Other territories.

(c) Sum of 31 December Estimated resident population for 2010 to 2014.

(d) Rate per 100,000 population.

Note: Case counts are based on state or territory of residence.

Source: AIHW National Hospital Morbidity Database.

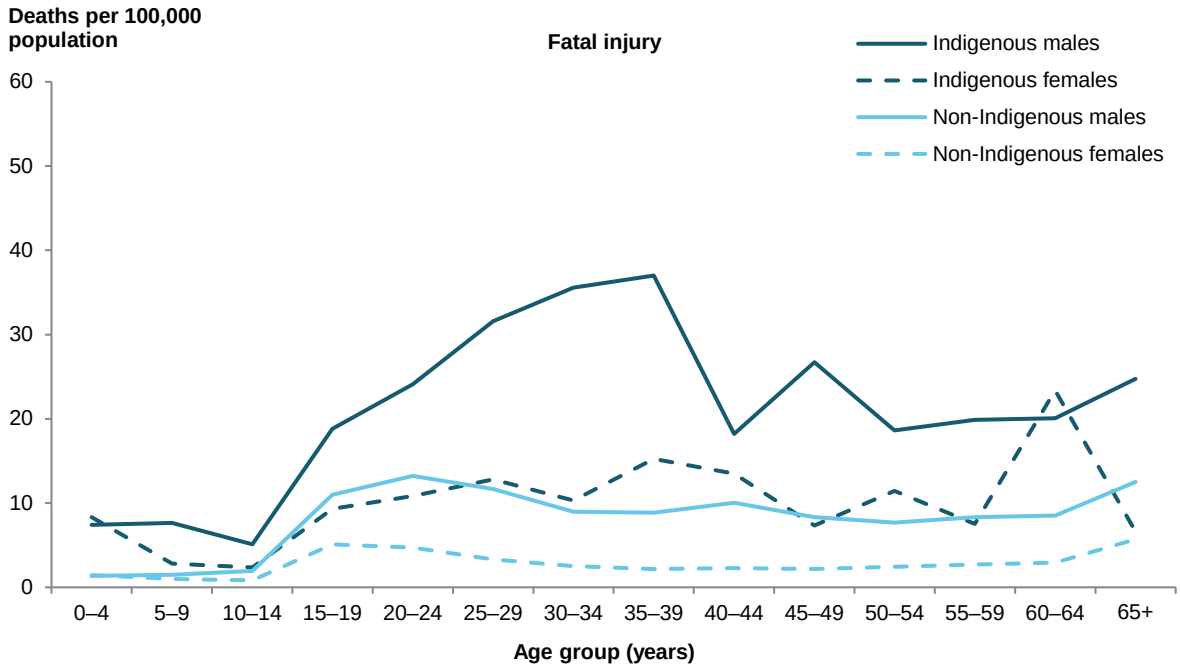
For the remainder of this Appendix, comparisons are made between 5-jurisdictional deaths data (as reported in the main body of the report) and national data for land transport serious injury cases. The emphasis is on whether the use of national data to calculate serious injury rates (rather than data for the subnational 5 jurisdictions) results in noticeably different values. The figures and tables shown below are equivalent to those which appear in the main body of the report.

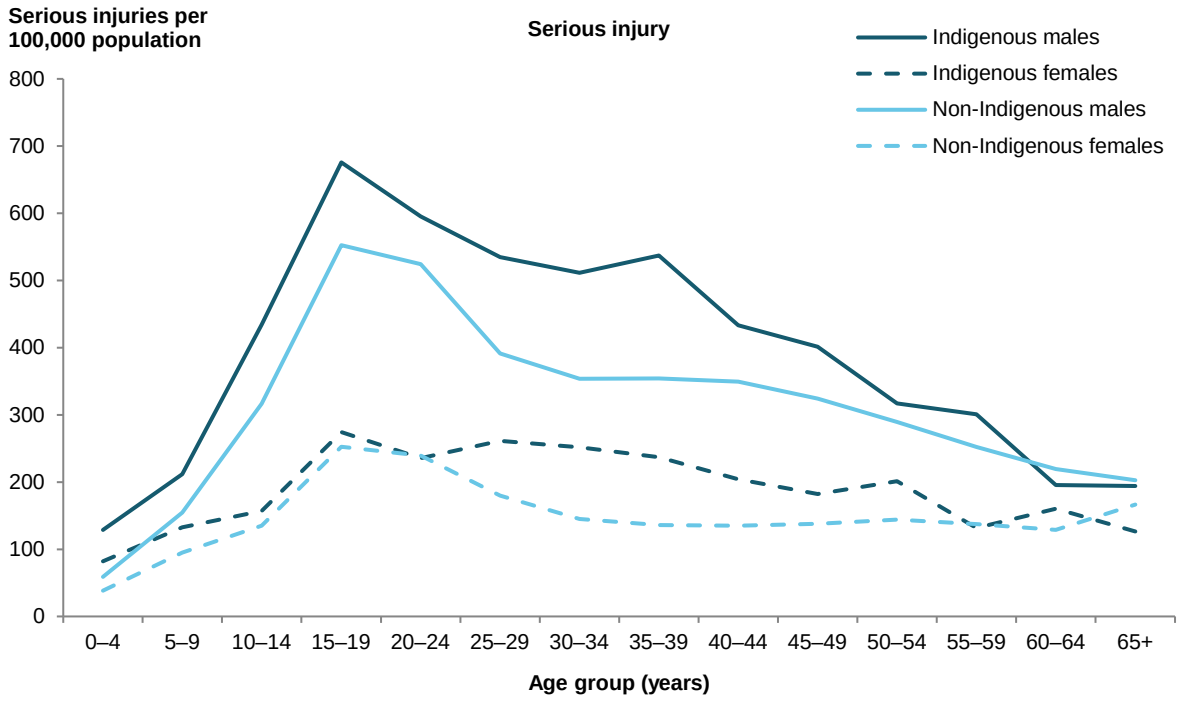
Figure C1 is equivalent to Figure 4.2.1 in the main body of the report. The use of national data for serious injury cases produced a pattern of age-specific rates that was similar to the pattern produced by the 5-jurisdictional data. Age-specific rates were generally higher across most age groups for 5-jurisdictional data, when compared with national data for Aboriginal and Torres Strait Islander males and females and non-Indigenous males. Non-Indigenous female rates for the youngest age groups were generally higher using 5-jurisdictional data, when compared with national data, but higher in the national data for those aged 20–24 and over.

Table C3 is equivalent to Table 4.2.2 in the main body of the report. The age-specific rates for serious injury cases are the same as those reported for Figure C1. The Indigenous-to-non-Indigenous rate ratios for serious injury cases were similar for males, females and persons, despite being marginally higher across most age groups. Similar to analyses shown in the body of the report for 5-jurisdictional data, rates based on national data for serious injury cases were around 30% higher for Aboriginal and Torres Strait Islander people than for non-Indigenous Australians.

Table C4 is equivalent to Table 4.2.3 in the main body of the report. The use of national data for serious injury cases produced rates for each mode of transport that were similar to rates produced by 5-jurisdictional data, for both Aboriginal and Torres Strait Islander people and non-Indigenous Australians. Serious injury rates for Aboriginal and Torres Strait Islander people based on 5-jurisdictional data tended to be marginally higher than rates based on national data, for most modes of transport. In contrast, for most modes of transport, serious injury rates for non-Indigenous Australians based on national data tended to be marginally higher than rates based on 5-jurisdictional data.

Figure C1: Age-specific rates of fatal and serious land transport injury, by Indigenous status, by sex, 2010–11 to 2014–15





Note: 'Fatal injury' is based on 5-jurisdictional data and 'Serious injury' is based on national data.

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Table C3: Age-specific and age-standardised rates of fatal and serious land transport injury, Australia 2010–11 to 2014–15

Indicator	Age group (years)														All ages (crude)	All ages (age std[(a)])
	0–4	5–9	10–14	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65+		
Fatal injury																
Indigenous male	7.4	7.6	5.1	18.8	24.1	31.6	35.6	37.0	18.2	26.7	18.6	19.9	20.1	24.7	18.6	21.6
Non-Indigenous male	1.4	1.5	1.9	11.0	13.2	11.7	9.0	8.9	10.1	8.3	7.7	8.3	8.5	12.5	8.6	8.4
Male rate ratio: Indigenous: Non-Indigenous	5.5	5.1	2.6	1.7	1.8	2.7	4.0	4.2	1.8	3.2	2.4	2.4	2.4	2.0	2.2	2.6
Indigenous female	8.3	2.8	2.4	9.3	10.9	12.8	10.3	15.2	13.5	7.3	11.4	7.5	23.4	6.6	8.9	9.7
Non-Indigenous female	1.4	1.0	0.8	5.1	4.7	3.3	2.5	2.2	2.3	2.2	2.4	2.7	2.9	5.7	3.1	3.0
Female rate ratio: Indigenous: Non-Indigenous	5.8	2.9	2.8	1.8	2.3	3.9	4.1	7.0	5.9	3.4	4.7	2.8	8.0	1.2	2.9	3.3
Rate ratio: Indigenous: Non-Indigenous	5.6	4.3	2.7	1.7	1.9	2.9	4.0	4.7	2.6	3.2	3.0	2.5	3.8	1.7	2.4	2.7
Serious injury																
Indigenous male	128.8	211.6	434.2	675.7	595.4	534.9	511.2	537.1	433.3	401.6	317.1	301.0	195.6	194.3	406.4	389.9
Non-Indigenous male	58.9	154.5	316.5	552.5	524.2	391.6	353.9	354.2	349.4	324.0	289.3	252.4	219.2	202.8	306.9	309.2
Male rate ratio: Indigenous: Non-Indigenous	2.2	1.4	1.4	1.2	1.1	1.4	1.4	1.5	1.2	1.2	1.1	1.2	0.9	1.0	1.3	1.3
Indigenous female	82.1	132.9	157.2	274.3	235.5	261.3	251.5	236.8	204.2	182.1	201.4	131.9	160.5	126.3	187.9	188.0
Non-Indigenous female	38.4	94.8	135.0	252.5	239.3	180.0	144.8	136.2	135.1	137.8	144.0	137.3	128.6	166.3	150.5	149.7
Female rate ratio: Indigenous: Non-Indigenous	2.1	1.4	1.2	1.1	1.0	1.5	1.7	1.7	1.5	1.3	1.4	1.0	1.2	0.8	1.2	1.3
Rate ratio: Indigenous: Non-Indigenous	2.2	1.4	1.3	1.2	1.1	1.4	1.5	1.6	1.3	1.3	1.2	1.1	1.0	0.9	1.3	1.3

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

Note: 'Fatal injury' is based on 5-jurisdictional data and 'Serious injury' is based on national data.

Sources: AIHW National Mortality Database, AIHW National Morbidity Database.

Table C4: Mode of transport for fatal and serious injury by Indigenous status, 2010–11 to 2014–15

	Males (Rate[b])		Females (Rate[b])		Persons				
					Indigenous Australians		Non-Indigenous Australians		
Mode of transport[a]	Indigenous Australians	Non-Indigenous Australians	Indigenous Australians	Non-Indigenous Australians	Count	Rate[b]	Count	Rate[b]	Rate ratio[c]
Fatal injury									
Car occupant	13.2	4.1	6.1	2.1	266	9.5	2,449	3.1	3.1
Driver	8.4	3.1	2.3	1.2	136	5.3	1,714	2.1	2.5
Passenger (inside/outside of vehicle)	4.4	0.9	3.7	0.8	123	4.0	660	0.8	4.8
Unspecified[d]	0.4	0.1	0.1	0.1	7	0.2	75	0.1	2.4
Motorcyclist	1.6	1.9	0.2	0.2	25	0.9	792	1.0	0.9
Pedal cyclist	0.2	0.3	0.0	0.1	4	0.1	140	0.2	0.5
Pedestrian	5.0	1.2	2.7	0.4	101	3.8	689	0.8	4.6
Animal or occupant of animal-drawn vehicle	0.0	0.0	0.0	0.0	0	0.0	32	0.0	0.0
Other land transport	1.7	0.9	0.7	0.2	26	1.2	467	0.6	2.0

(continued)

Table C4 (continued): Mode of transport for fatal and serious injury by Indigenous status, 2010–11 to 2014–15

Mode of transport[a]	Males (Rate[b])		Females (Rate[b])		Persons				
					Indigenous Australians		Non-Indigenous Australians		
	Indigenous Australians	Non-Indigenous Australians	Indigenous Australians	Non-Indigenous Australians	Count	Rate[b]	Count	Rate[b]	Rate ratio[c]
Serious injury									
Car occupant	135.0	76.2	108.0	76.1	4,031	121.3	86,172	76.2	1.6
Driver	69.9	52.3	46.7	45.3	1,755	58.0	55,345	48.7	1.2
Passenger (inside/outside of vehicle)	50.9	17.9	48.9	24.3	1,884	49.9	23,485	21.2	2.4
Unspecified[d]	14.2	6.0	12.4	6.5	392	13.3	7,342	6.3	2.1
Motorcyclist	99.9	108.9	11.5	11.7	2,221	55.6	65,495	60.6	0.9
Pedal cyclist	56.8	72.0	13.5	18.4	1,465	34.9	48,774	45.3	0.8
Pedestrian	52.3	17.8	29.7	12.9	1,365	40.9	17,441	15.4	2.7
Animal or occupant of animal-drawn vehicle	12.5	8.5	11.8	21.6	444	12.0	16,049	14.9	0.8
Other land transport	33.3	25.9	13.6	9.0	747	23.4	19,724	17.4	1.3

(a) 'Mode of transport' is how a person was being conveyed when injured. 'Mode' is the type of vehicle or being a pedestrian.

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

(c) Ratio of age-standardised rate for persons specified as Indigenous, divided by persons specified as non-Indigenous.

(d) Includes unspecified occupants inside of vehicle, persons injured while on the outside of vehicle, and persons injured while boarding or alighting from a vehicle.

Note: 'Fatal injury' is based on 5-jurisdictional data and 'Serious injury' is based on national data.

Sources: AIHW National Mortality Database; AIHW National Morbidity Database.

Table C5 is equivalent to Table 4.2.5 in the main body of the report. The use of national data for serious injury cases produced similar rates for each remoteness area of residence as for 5-jurisdictional data for both Aboriginal and Torres Strait Islander people and non-Indigenous Australians. Serious injury rates for Aboriginal and Torres Strait Islander people based on 5-jurisdictional data tended to be higher than rates based on national data for all remoteness zones except for *Major cities* where rates based on national data were higher.

Table C5: Age-standardised fatal and serious injury rates, by remoteness area of residence, by Indigenous status, for persons involved in land transport accidents, 2010–11 to 2014–15

ASGC/ASGS[a] remoteness area of residence	Age-standardised rate per 100,000 population[b] (95% CI)					
	Indigenous Australians			Non-Indigenous Australians		
	Males	Females	Persons	Males	Females	Persons
Fatal injury						
Major cities	10 (8–14)	3 (2–5)	7 (5–9)	7 (7–7)	2 (2–2)	5 (4–5)
Inner regional	20 (15–25)	10 (7–14)	15 (12–18)	17 (16–18)	6 (6–7)	12 (11–12)
Outer regional	26 (21–33)	11 (8–15)	18 (15–22)	20 (19–22)	8 (7–9)	14 (13–15)
Remote	41 (31–54)	31 (22–42)	36 (29–44)	25 (22–29)	9 (7–12)	18 (16–20)
Very remote	60 (51–71)	25 (20–33)	42 (36–48)	24 (19–30)	13 (9–19)	20 (16–24)
Overall[c]	**22 (19–25)**	**10 (8–11)**	**15 (14–17)**	**8 (8–9)**	**3 (3–3)**	**6 (6–6)**
Serious injury						
Major cities	331 (314–347)	162 (150–173)	245 (235–255)	258 (257–260)	128 (127–129)	193 (192–194)
Inner regional	378 (355–401)	179 (163–194)	278 (264–292)	398 (394–402)	185 (182–187)	292 (289–294)
Outer regional	357 (336–377)	173 (159–187)	263 (251–275)	465 (458–471)	206 (201–210)	338 (334–342)
Remote	536 (495–576)	280 (250–311)	410 (384–435)	582 (564–601)	268 (254–281)	435 (423–447)
Very remote	508 (477–539)	232 (211–252)	369 (351–388)	705 (671–739)	410 (380–440)	580 (557–604)
Overall[c]	**390 (380–400)**	**188 (181–195)**	**288 (282–294)**	**309 (308–311)**	**149 (148–150)**	**230 (229–231)**

(a) For fatal injury, rates are based on the ASGS classification, while serious injury rates for 2010–11 to 2011–12 are based on the ASGC classification and rates for 2012–13 to 2014–15 are based on the ASGS classification

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

(c) All remoteness areas combined. Age-standardised; not standardised for remoteness.

Note: 'Fatal injury' is based on 5-jurisdictional data and 'Serious injury' is based on national data

Sources: AIHW National Mortality Database; AIHW National Hospital Morbidity Database.

Table C6 is equivalent to Table 4.2.12 in the main body of the report. The use of national data for serious injury cases produced annual rates for the period from 2010–11 to 2014–15 that were similar to those produced from 5-jurisdictional data, for both Aboriginal and Torres Strait Islander people and non-Indigenous Australians.

Serious injury rates for Aboriginal and Torres Strait Islander people based on 5-jurisdictional data were higher than rates based on national data for each of the 5 years over the period of interest, while rates for non-Indigenous Australians based on national data were higher for the first 2 years of the period and lower thereafter.

Table C6: Trends in age-standardised rates for fatal and serious injury by Indigenous status, 2010–11 to 2014–15

	Age-standardised rate per 100,000 population[(a)] (95% CI)									
	Fatally injured					Seriously injured				
	2010–11	2006–07	2007–08	2008–09	2014–15	2010–11	2006–07	2007–08	2008–09	2014–15
Indigenous Australians										
Males	25 (18–32)	24 (17–32)	14 (10–19)	23 (16–30)	21 (15–28)	351 (329–374)	358 (335–380)	403 (380–427)	426 (403–450)	406 (383–429)
Females	7 (4–10)	12 (7–17)	13 (8–18)	8 (5–12)	8 (5–12)	162 (146–177)	180 (164–195)	178 (163–193)	204 (187–221)	213 (196–230)
Persons	16 (12–19)	18 (14–22)	14 (10–17)	16 (12–19)	15 (11–18)	256 (242–269)	267 (254–281)	290 (276–303)	314 (300–329)	309 (295–323)
Non-Indigenous Australians										
Males	9 (9–10)	9 (8–10)	8 (8–9)	8 (7–8)	7 (7–8)	302 (298–305)	313 (309–316)	303 (299–306)	315 (312–318)	314 (310–317)
Females	3 (3–4)	3 (3–4)	3 (3–3)	3 (2–3)	3 (3–3)	146 (144–149)	149 (147–151)	145 (143–147)	153 (150–155)	155 (153–157)
Persons	6 (6–7)	6 (6–7)	6 (5–6)	5 (5–6)	5 (5–5)	224 (222–226)	231 (229–233)	224 (222–226)	234 (232–236)	235 (233–237)

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

Notes

1. 'Fatal injury' is based on 5-jurisdictional data and 'Serious injury' is based on national data.
2. Confidence Intervals (in brackets) are provided to show by about how much rates might be expected to vary (between years, for example), in view of the number of cases. See Appendix A for further information..

Sources: AIHW National Mortality Database; AIHW National Morbidity Database.

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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 Geographical Classification
ASGS	Australian Statistical Geography Standard
BITRE	Bureau of Infrastructure, Transport and Regional Economics
DIRDC	Department of Infrastructure, Regional Development and Cities
ICD	International classification of diseases
ICD-10	International classification of diseases, 10th revision
ICD-10-AM	International classification of diseases, 10th revision, Australian modification
NISU	National Injury Surveillance Unit
NHMD	National Hospital Morbidity Database
NMD	National Mortality Database
UCoD	underlying cause of death

Symbols

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

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Related publications

The following AIHW publications are previous reports in this series, relating to transport injury of Aboriginal and Torres Strait Islander people.

AIHW: Harrison JE & Berry J 2008. Injury of Aboriginal and Torres Strait Islander people due to transport, 2001–02 to 2005–06. Injury research and statistics series no. 46. Cat. no. INJCAT 120. Canberra: AIHW.

AIHW: Henley G & Harrison JE 2010. Injury of Aboriginal and Torres Strait Islander people due to transport, 2003–04 to 2007–08. Injury research and statistics series no. 58. Cat. no. INJCAT 134. Canberra: AIHW.

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Berry JG, Nearmy DM & Harrison JE 2007. Injury of Aboriginal and Torres Strait Islander people due to transport, 1999–00 to 2003–04. AIHW cat. no. INJCAT 100. Canberra: AIHW and Australian Transport Safety Bureau.

The age-standardised rate for Aboriginal and Torres Strait Islander people was 2.7 times the rate for non-Indigenous Australians for fatal cases and 1.3 times the rate for non-Indigenous Australians for serious injuries. Age-standardised rates of fatal and serious land transport injury increased with the remoteness of the person's usual residence, regardless of Indigenous status. Fatal and serious injury rates for Aboriginal and Torres Strait Islander people did not change significantly.

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