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Trends in serious injury due to land transport accidents, Australia 2000–01 to 2007–08

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and
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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
BITRE	Bureau of Infrastructure, Transport, and Regional Economics
DIT	Department of Infrastructure and Transport
GISCA	National Key Centre for Social Applications of Geographic Information Systems
ICD	International Classification of Diseases
ICD-10-AM	International Classification of Diseases, 10th Revision, Australian Modification
ICISS	ICD-based Injury Severity Score
MV	Motor Vehicle
NCCH	National Centre for Classification in Health
NHMD	National Hospital Morbidity Database
SLA	Statistical Local Area
SRR	Standardised Rate Ratio

Summary

This report presents estimates of trends in the number and rate of persons injured in Australia due to road traffic crashes. Trends are considered statistically significant if the 95% confidence interval (CI) does not include zero. Serious injury is defined as when the person was admitted to hospital for their injury. High threat to life, or life threatening, injury are a subgroup of hospitalised injury for which severe injury diagnoses were reported. Injury deaths are not included in this report.

Trends in serious injury

Over the 8-year period from 2000–01 to 2007–08, age-standardised rates for persons seriously injured due to a road traffic crash increased from 138.4 to 153.4 per 100,000 population, an average annual increase of 1.7% (CI: 1.5% to 1.9%).

All jurisdictions except for Victoria and the Northern Territory experienced significant increases in age-standardised rates of serious injury due to involvement in a road crash over the 8-year period.

Trends in life-threatening injury

Over one-quarter (28%) of those seriously injured due to a road crash sustained life-threatening injuries over the 8-year period from 2000–01 to 2007–08.

For males, those aged 15–24 years had the highest age-specific rates, while for females, those aged 15–24 years and those aged 65 years and over had the highest age-specific rates.

Drivers of motor vehicles, motor cyclists and pedal cyclists all recorded significant increases in age-standardised rates of life-threatening injury over this period.

Motorcyclists recorded an average annual rate of increase of 7.4% (CI: 6.5% to 8.3%). For males in all age groups except aged 0–4 years, there were significant increases in age-specific rates over the 8-year period. The largest increases in rates were recorded in the 45–64 years and 65 years and over age groups which recorded average annual increases of 15.5% (CI: 13.3% to 17.6%) and 12.7% (CI: 7.1% to 18.5%) respectively. For female motorcyclists there were significant increases for those aged 25–44 years and 45–64 years.

Pedal cyclists recorded an average annual rate of increase of 7.5% (CI: 6.2% to 8.7%). For both males and females in age groups 25–44 years, 45–64 years and 65 years and over, there were significant increases in age-specific rates over the 8-year period. The largest rate increase for males was recorded for those aged 45–64 years with an average annual increase of 15.1% (CI: 12.3% to 18.0%), while for females the largest rate increase was recorded for those 65 years and over with an average annual increase of 12.2% (CI: 1.0% to 24.6%).

For males aged 45–64 years, the combined total of high threat to life injuries due to motorcycle and pedal cycle road traffic crashes as a percentage of all high threat to life injuries due to road traffic crashes rose from almost 30% in 2000–01 to 50% in 2007–08.

Persons living in remote areas recorded the highest rate of increase with an average annual rate of increase of 6.1% (CI: 3.3% to 9.0%), while persons living in major cities and outer regional areas recorded smaller, but significant average annual rates of increase.

1 Overview

1.1 Introduction

The primary purpose of this publication is to present trend estimates of the number of persons seriously injured in Australia due to road vehicle traffic crashes (i.e. accidents involving road vehicles travelling on public roads) in the 8-year period from 2000–01 to 2007–08, the latest year for which data were available at the time this report was prepared. Road vehicles include motor vehicles, pedal cycles and other road vehicles such as trams, animals and animal-drawn vehicles (when they travel on the road). The report also discusses trends in injuries associated with land transport accidents occurring in non-traffic settings.

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 one or more nights stay in a hospital bed (i.e. deaths in hospital are excluded). The definition of transport injury used in this report includes only unintentional injuries. Hence, cases reported as intentional self-harm, assault or undetermined intent are excluded. Readers should consult the appendix for notes on the methodology employed and for the meaning of technical terms used in this report such as ‘separations’.

The main focus is on cases of serious injury resulting from road vehicle traffic crashes which are defined as being high threat to life. These cases are selected on the basis of having an ICD-based Injury Severity Score (ICISS) of less than 0.941. ICISS is a measure of injury severity based upon a patient’s injury diagnoses. The ICISS measure for this report is based upon ICD-10-AM coding and was derived using Australian hospital separations data (Stephenson et al. 2004). More detail on the ICISS method is provided in Appendix 3 of this report. In some parts of this report, the high threat to life injuries are referred to as ‘life threatening’ injuries.

1.2 Trends in serious injury due to all land transport

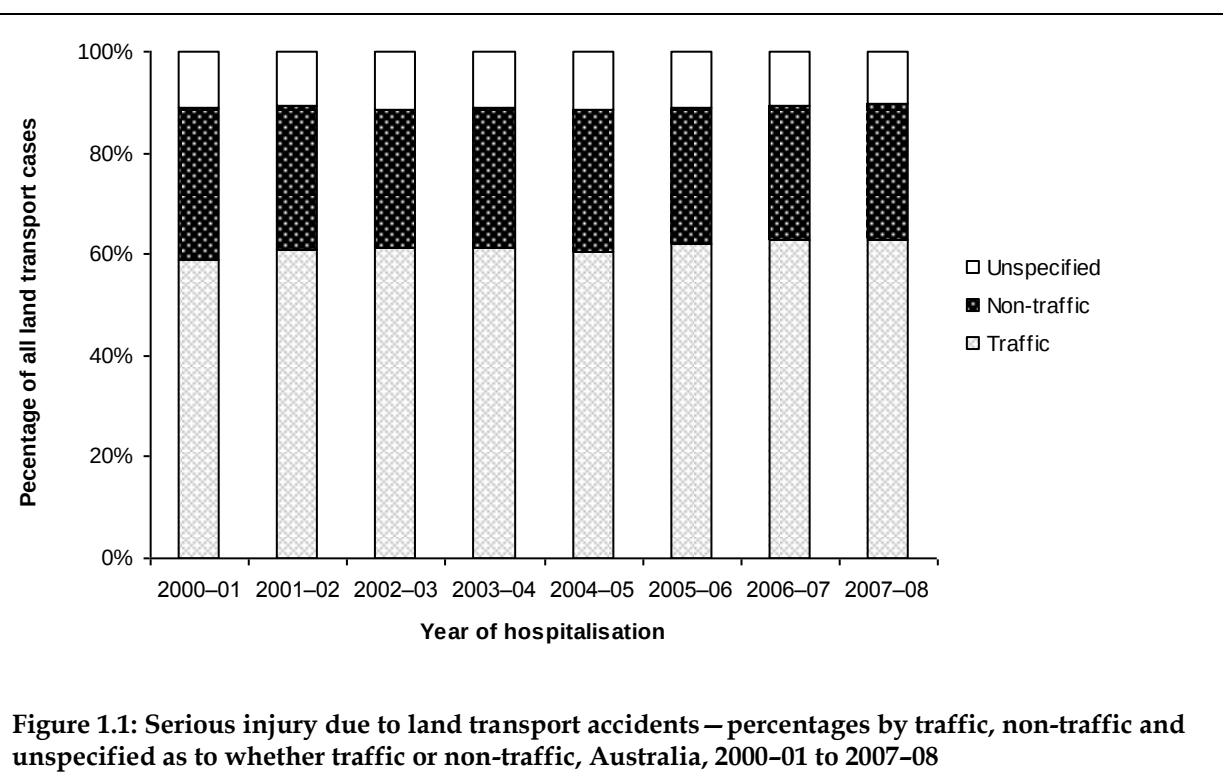
For the 8-year period from 2000–01 to 2007–08, the age-standardised rates for persons seriously injured as a result of a land transport accident (traffic, non-traffic and unspecified) rose from 234.3 to 244.8 per 100,000 population, representing an average annual increase of 1.0% (95% CI: 0.9%, 1.1%) (Table 1.1). A slightly higher increase was seen for persons seriously injured with high threat to life who recorded an average annual increase of 1.3% (95% CI: 1.0%, 1.6%) over the 8-year period. Approximately one-quarter of those seriously injured in a road transport accident sustained life-threatening injuries.

The number of persons known to be seriously injured due to an on-road (i.e. traffic) accident consistently accounted for around 60% of all persons seriously injured due to some form of land transport accident over the period of interest (Figure 1.1). Those seriously injured due to a non-traffic (i.e. off-road) accident and those seriously injured in a land transport accident where it was not specified if the accident occurred on-road or off-road, accounted for around 30% and 10% respectively of all persons seriously injured due to some form of land transport accident.

Table 1.1: Counts and age-standardised rates for persons injured due to land transport accidents by severity of injury, Australia, 2000–01 to 2007–08

Indicator	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Seriously injured								
Persons	45,186	46,706	44,901	46,862	49,296	50,401	52,066	51,710
Rate ^(a)	234.3	239.2	227.5	234.8	244.1	246.3	250.7	244.8
Life-threatening injury								
Persons	11,077	11,314	10,720	11,249	12,295	12,543	12,928	12,928
Rate ^(a)	57.5	57.9	54.1	56.1	60.3	60.7	61.4	60.3

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



2 Trends in serious injury due to road vehicle traffic crashes, 2000–01 to 2007–08

This chapter reports on serious injuries which resulted from on-road traffic accidents (i.e. the person was injured in some form of transport accident while travelling on or adjacent to a public road). The number of road deaths by financial year is reported in Table 2.1 for comparative purposes only. For further information on road deaths, refer to Appendix 2.

2.1 Overview

There was a distinct downward trend in the number of road deaths over the 8-year period from 2000–01 to 2007–08 (Table 2.1). Conversely, age-standardised rates for persons seriously injured due to a road crash increased over the same period from 138.4 to 153.4 per 100,000 population, representing an average annual increase of 1.7% (95% CI: 1.5%, 1.9%)¹. A similar increase over the period of interest was seen for persons seriously injured with high threat to life who experienced an average annual increase of 1.9% (95%CI: 1.6%, 2.2%). Over one-quarter (28%) of those seriously injured due to a road crash sustained high threat to life injuries.

Table 2.1: Persons seriously injured due to road vehicle traffic crashes by indicator, Australia, 2000–01 to 2007–08

Indicator	Year ^(a)							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Deaths ^(b)	1,761	1,751	1,677	1,595	1,577	1,649	1,598	1,489
Rate ^(c)	9.2	9.0	8.5	7.9	7.7	8.0	7.6	7.0
Seriously injured	26,694	28,440	27,526	28,782	29,850	31,204	32,777	32,543
Rate ^(c)	138.4	145.6	139.3	144.0	147.4	152.1	157.2	153.4
Seriously injured with high threat-to-life	7,479	7,782	7,474	7,871	8,365	8,750	9,239	9,157
Rate ^(c)	38.8	39.8	37.7	39.2	41.0	42.3	43.9	42.7

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

(b) Deaths data supplied by the Bureau of Infrastructure, Transport and Regional Economics (BITRE).

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

For more detailed information on trends in fatal injury due to road traffic crashes refer to Appendix 2.

¹ Trends are considered statistically significant if the 95% confidence interval (CI) does not include zero. For a more detailed explanation of confidence intervals refer to Data issues 'Denominators, rates and confidence intervals' p. 86.

2.2 State and territory of usual residence

All jurisdictions except for Victoria and the Northern Territory experienced significant increases in age-standardised rates of serious injury due to involvement in a road vehicle traffic crash over the 8-year period from 2000–01 to 2007–08 (Table 2.2 and Figure 2.1). The Australian Capital Territory recorded the highest rate of increase over this period with an average annual increase of 13.7% (95% CI: 11.9%, 15.6%). Neither Victoria nor the Northern Territory recorded significant changes in rates over the 8-year period. The Northern Territory recorded the highest annual rates of all jurisdictions over the entire 8-year period with rates consistently 30%–50% above the national rate.

Table 2.2: Counts and age-standardised rates for persons seriously injured due to road vehicle traffic crashes by state and territory of residence, Australia, 2000–01 to 2007–08

State or territory of residence	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW								
Seriously injured	8,598	9,026	8,488	9,243	9,393	10,108	10,296	9,466
Rate	132.2	137.1	128.2	138.8	139.9	149.6	150.6	136.5
Vic								
Seriously injured	7,562	8,247	8,052	7,834	8,196	8,235	8,551	8,849
Rate	158.0	170.1	164.0	157.6	162.7	161.3	164.7	167.2
Qld								
Seriously injured	4,626	5,177	5,070	5,376	5,874	5,986	6,542	6,717
Rate	128.1	140.7	134.4	139.4	148.8	148.5	158.1	158.7
WA								
Seriously injured	2,008	2,062	2,001	2,271	2,348	2,454	2,723	2,840
Rate	105.6	107.2	103.0	115.1	116.9	120.2	130.2	132.4
SA								
Seriously injured	2,256	2,216	2,298	2,293	2,221	2,347	2,411	2,475
Rate	151.6	148.4	152.6	151.1	145.4	152.3	155.2	157.2
Tas								
Seriously injured	616	562	571	602	640	736	739	714
Rate	133.3	121.6	125.0	129.4	136.5	155.9	155.5	149.2
ACT								
Seriously injured	231	293	243	328	361	492	539	568
Rate	72.8	89.1	72.1	97.5	107.4	142.6	153.5	160.6
NT								
Seriously injured	435	455	444	431	392	406	498	511
Rate	211.7	211.2	209.0	208.9	187.5	194.7	223.4	231.4
Australia^(a)								
Seriously injured	26,694	28,440	27,526	28,782	29,850	31,204	32,777	32,543
Rate	138.4	145.6	139.3	144.0	147.4	152.1	157.2	153.4

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

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

New South Wales, Victoria, Queensland, Western Australia and the Australian Capital Territory all recorded significant increases in age-standardised rates of life-threatening injury due to involvement in a road vehicle traffic crash over the 8-year period from 2000–01 to 2007–08 (Table 2.3 and Figure 2.1). As with serious injury, the Australian Capital Territory recorded the highest rate of increase over this period with an average annual increase of 7.7% (95% CI: 4.7%, 10.8%). South Australia, Tasmania and the Northern Territory did not record significant changes in rates over the 8-year period. The Northern Territory recorded by far the highest annual rates of all jurisdictions over the entire 8-year period, with rates consistently double the national rate.

Table 2.3: Counts and age-standardised rates for persons seriously injured with high threat to life due to road vehicle traffic crashes by state and territory of residence, Australia, 2000–01 to 2007–08

State or territory of residence	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW								
Life-threatening injury	2,316	2,255	2,055	2,493	2,662	2,704	2,782	2,596
Rate	35.5	34.1	30.8	37.2	39.0	39.5	40.0	36.8
Vic								
Life-threatening injury	1,926	2,089	2,049	2,017	2,094	2,200	2,335	2,373
Rate	40.2	43.0	41.5	40.3	41.2	42.7	44.5	44.2
Qld								
Life-threatening injury	1,329	1,507	1,507	1,492	1,705	1,701	1,850	1,866
Rate	37.1	41.2	40.2	38.8	43.3	42.2	44.6	44.0
WA								
Life-threatening injury	605	629	621	643	646	729	815	858
Rate	32.2	32.9	32.2	32.8	32.3	35.7	39.0	39.8
SA								
Life-threatening injury	736	713	704	649	665	758	770	762
Rate	48.8	46.7	45.9	42.2	42.8	48.0	48.6	47.1
Tas								
Life-threatening injury	203	188	171	170	183	231	222	215
Rate	43.6	40.0	37.2	35.6	38.7	48.3	46.0	43.8
ACT								
Life-threatening injury	75	111	85	112	112	122	131	163
Rate	25.9	34.3	26.2	35.0	34.2	35.3	36.7	46.7
NT								
Life-threatening injury	167	150	146	152	156	156	190	200
Rate	83.4	71.2	72.0	75.3	78.8	80.6	85.2	96.0
Australia^(a)								
Life-threatening injury	7,479	7,782	7,474	7,871	8,365	8,750	9,239	9,157
Rate	38.8	39.8	37.7	39.2	41.0	42.3	43.9	42.7

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

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

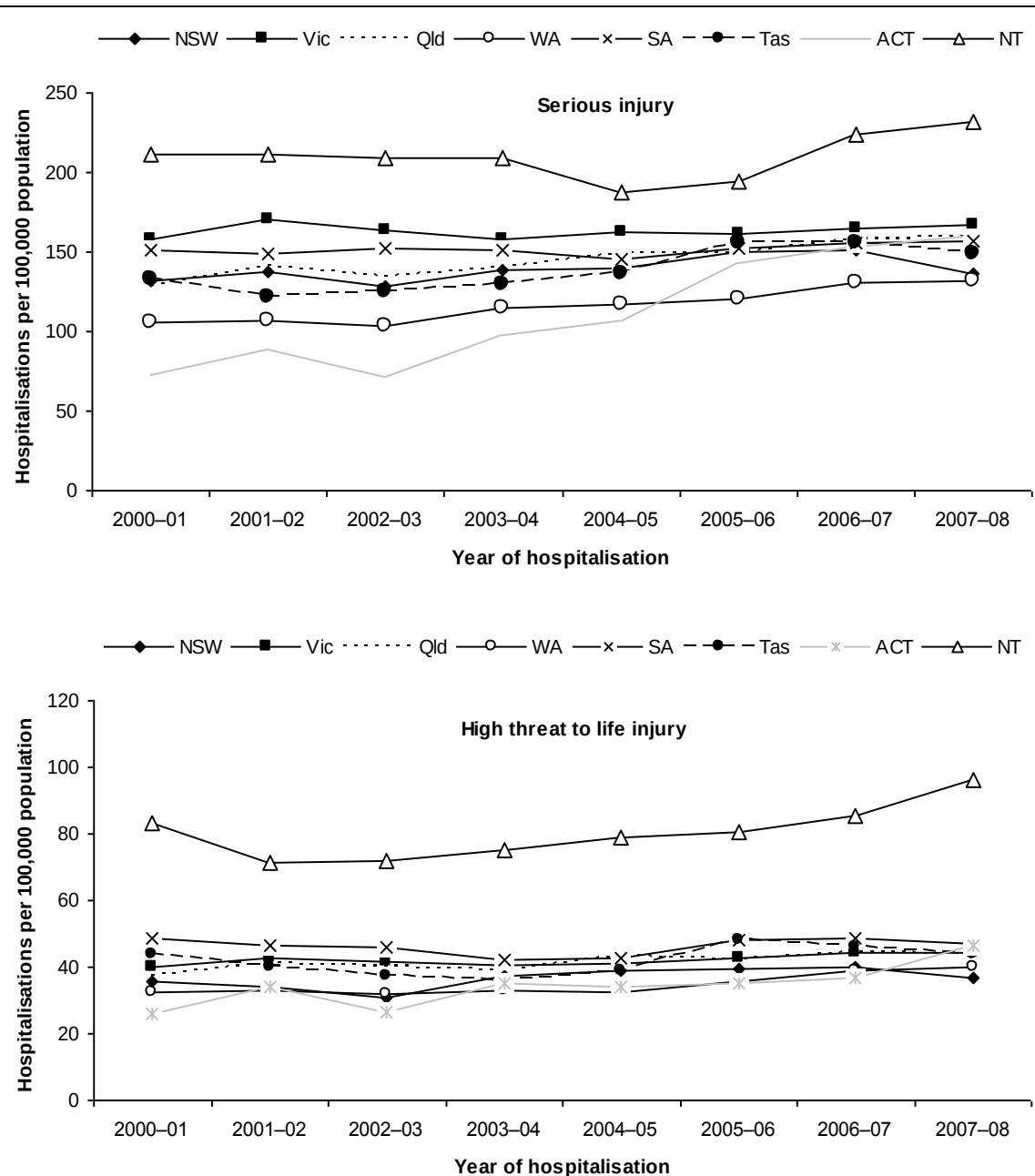


Figure 2.1: Road vehicle traffic crashes – serious and high threat to life injury rates per 100,000 population by state and territory of residence, Australia, 2000-01 to 2007-08

3 Trends in high threat to life injury due to road vehicle traffic crashes, 2000–01 to 2007–08

This chapter reports on high threat to life injuries which resulted from on-road traffic accidents (i.e. the person was injured in some form of transport accident while travelling on or adjacent to a public road).

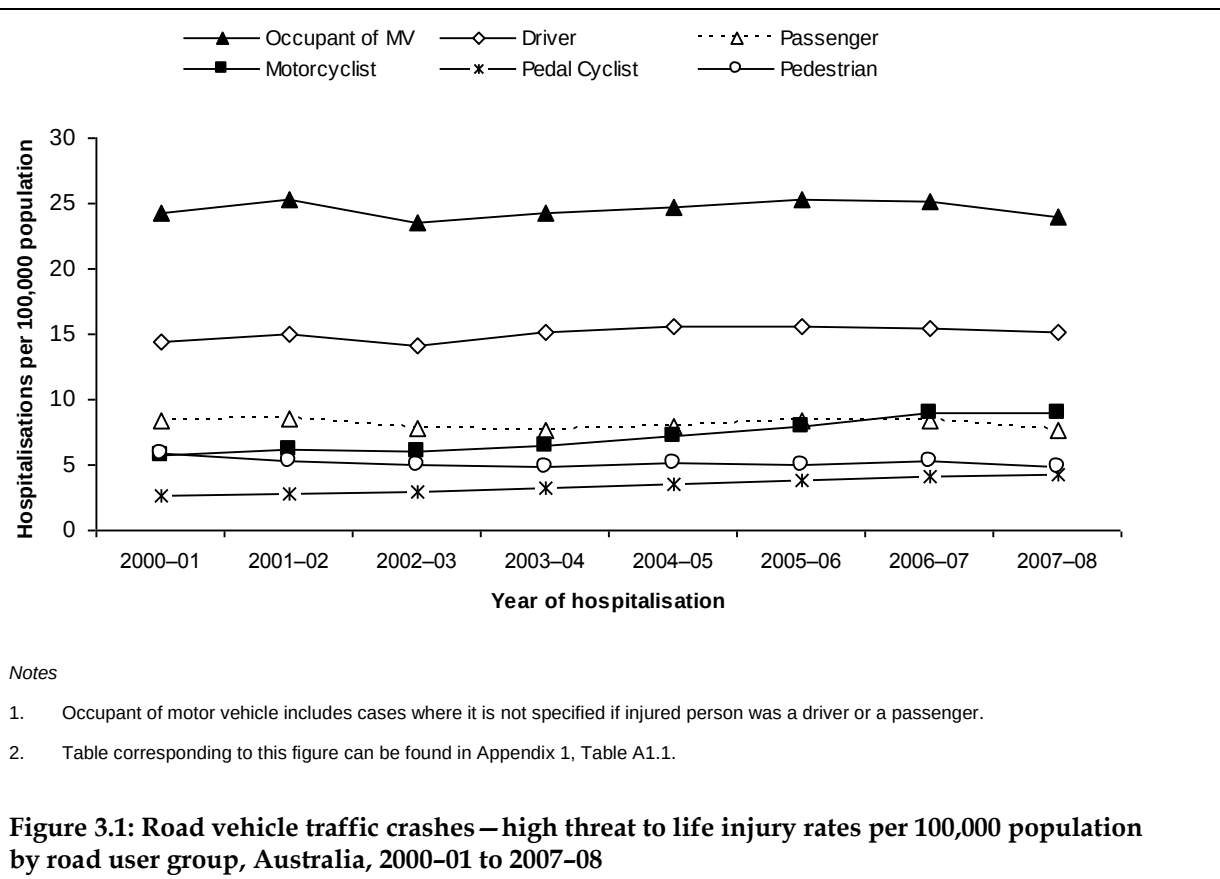
3.1 Road user groups

All road user groups except for pedestrians experienced upward trends in the number of persons seriously injured with high threat to life over the 8-year period from 2000–01 to 2007–08 (Table 3.1). Drivers of motor vehicles, motor cyclists and pedal cyclists all recorded significant increases in age-standardised rates of life-threatening injury over this period (Figure 3.1). Motorcyclists and pedal cyclists recorded the highest rates of increase with average annual rates of increase of 7.4% (95% CI: 6.5%, 8.3%) and 7.5% (95% CI: 6.2%, 8.7%) respectively. There were no significant changes in rates for passengers of motor vehicles and occupants of motor vehicles overall, while pedestrians recorded a slight but significant average annual rate of decrease of 1.6% (95% CI: 0.6%, 2.5%).

Table 3.1: Persons seriously injured with high threat to life due to road vehicle traffic crashes by road user group, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Occupant of MV ^(a)	4,678	4,950	4,661	4,867	5,065	5,237	5,299	5,182
<i>Driver</i>	2,783	2,926	2,802	3,057	3,183	3,239	3,280	3,280
<i>Passenger</i>	1,601	1,665	1,553	1,536	1,615	1,736	1,749	1,639
Motorcyclist	1,115	1,214	1,188	1,287	1,442	1,614	1,867	1,915
Pedal cyclist	523	543	588	654	721	777	869	917
Pedestrian	1,119	1,042	998	990	1,057	1,027	1,125	1,044
Other or unknown	44	33	39	73	80	95	79	99

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



Road user groups by state and territory of residence

Trends in counts and age-standardised serious injury rates for road vehicle traffic crashes over the 8-year period from 2000-01 to 2007-08 for those with life-threatening injuries by state or territory of residence and road user group are presented in Table 3.2 and Figures 3.2-3.4. For drivers of motor vehicles observations indicated that:

- All jurisdictions except South Australia recorded an upward trend in the number of persons seriously injured.
- The Australian Capital Territory recorded the highest average annual rate of increase of 7.4% (95% CI: 2.5%, 12.5%) while New South Wales and Western Australia recorded smaller, but significant average annual rates of increase (Figure 3.2).
- Rates for all other jurisdictions did not change significantly.

Observations relating to passengers of motor vehicles indicated that:

- Victoria, Queensland, Western Australia, the Australian Capital Territory and the Northern Territory recorded upward trends in the number of persons seriously injured.
- Only the Northern Territory recorded a significant increase in the average annual rate with an increase of 4.7% (95% CI: 0.2%, 9.3%) (Figure 3.2).
- Rates for all other jurisdictions did not change significantly.

Similar patterns were observed for both motorcyclists and pedal cyclists:

- All jurisdictions recorded an upward trend in the number of persons seriously injured.
- For motorcyclists, the Australian Capital Territory and Western Australia recorded the highest average annual rates of increase of 14.7% (95% CI: 7.7%, 22.1%) and 10.7% (95% CI: 7.8%, 13.8%) respectively (Figure 3.3).
- For pedal cyclists, the Australian Capital Territory and South Australia recorded the highest average annual rates of increase of 18.5% (95% CI: 8.2%, 29.8%) and 9.5% (95% CI: 5.2%, 13.9%) respectively (Figure 3.3).
- All other jurisdictions except Tasmania (motorcyclists and pedal cyclists) and Northern Territory (pedal cyclists), for which there was no significant change in rates, recorded smaller, but significant average annual rates of increase.

When looking at pedestrians it was observed that:

- Victoria, South Australia, the Australian Capital Territory and the Northern Territory all recorded downward trends in the number of persons seriously injured, while Queensland and Western Australia recorded upward trends.
- The Northern Territory recorded the highest average annual rate of decrease of 9.5% (95% CI: 3.4%, 15.2%), while Victoria and South Australia recorded smaller, but significant average annual rates of decrease (Figure 3.4).
- Rates for all other jurisdictions did not change significantly.

Rates for the Northern Territory generally remained higher than for other jurisdictions for all types of road user. This difference in rates was most pronounced for passengers of motor vehicles where the rates for the Northern Territory were two or more times as great when compared to other jurisdictions. Rates for all other jurisdictions were generally similar for all types of road user with the greatest variation in rates occurring among drivers of motor vehicles.

Table 3.2: Persons seriously injured with high threat to life due to road vehicle traffic crashes by state and territory of residence and road user group, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW								
Occupant of MV ^(a)	1,426	1,404	1,243	1,449	1,593	1,567	1,555	1,416
<i>Driver</i>	872	826	726	924	1,007	982	1,004	900
<i>Passenger</i>	467	477	438	437	509	517	473	434
Motorcyclist	326	333	306	410	429	491	555	523
Pedal cyclist	155	163	171	203	205	243	241	267
Pedestrian	396	346	329	405	414	373	405	353
Other or unknown	13	9	6	26	21	30	26	37
Vic								
Occupant of MV ^(a)	1,198	1,330	1,279	1,299	1,321	1,366	1,350	1,407
<i>Driver</i>	762	842	807	871	876	883	867	940
<i>Passenger</i>	380	412	414	379	395	430	433	413
Motorcyclist	262	309	286	283	310	343	407	415
Pedal cyclist	146	128	160	187	188	200	253	252
Pedestrian	312	315	315	237	262	278	309	287
Other or unknown	8	7	9	11	13	13	16	12
Qld								
Occupant of MV ^(a)	796	912	908	880	941	966	989	984
<i>Driver</i>	464	508	545	554	576	588	618	608
<i>Passenger</i>	256	308	289	258	292	313	295	318
Motorcyclist	257	295	326	313	403	389	474	496
Pedal cyclist	109	127	125	137	172	146	173	178
Pedestrian	159	161	140	145	166	169	194	185
Other or unknown	8	12	8	17	23	31	20	23
WA								
Occupant of MV ^(a)	402	419	387	418	396	433	488	495
<i>Driver</i>	217	236	218	240	234	261	269	304
<i>Passenger</i>	162	153	143	156	140	138	192	166
Motorcyclist	85	104	102	113	124	159	169	201
Pedal cyclist	42	42	53	38	55	54	73	70
Pedestrian	71	63	76	68	68	76	78	83
Other or unknown	5	..	..	6	..	7	7	9
SA								
Occupant of MV ^(a)	474	494	488	447	425	490	472	461
<i>Driver</i>	275	305	320	282	273	307	287	304
<i>Passenger</i>	180	162	132	153	136	163	172	137
Motorcyclist	114	83	84	95	100	126	140	143
Pedal cyclist	43	47	48	43	62	73	75	78
Pedestrian	101	87	79	57	74	64	78	70
Other or unknown	..	..	5	7	..	5	5	10

(continued)

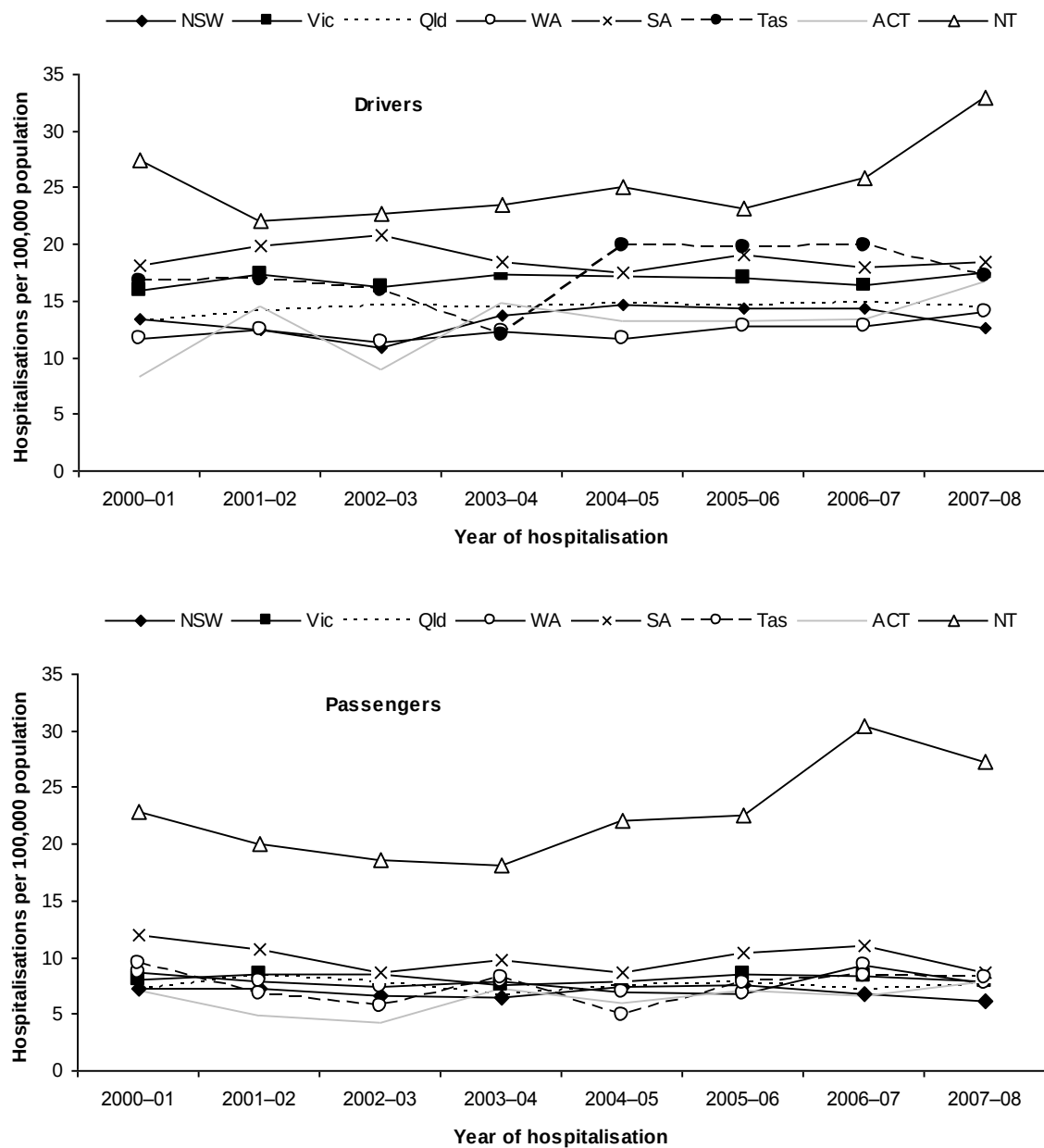
Table 3.2 (continued): Persons seriously injured with high threat to life due to road vehicle traffic crashes by state and territory of residence and road user group, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Tas								
Occupant of MV ^(a)	140	124	107	102	127	139	147	129
<i>Driver</i>	78	78	74	58	95	96	97	86
<i>Passenger</i>	44	33	26	39	23	36	40	39
Motorcyclist	26	33	36	27	25	40	36	41
Pedal cyclist	15	10	12	14	10	23	20	19
Pedestrian	20	20	16	24	19	27	18	20
Other or unknown	..	..	5	7	..	5	5	10
ACT								
Occupant of MV ^(a)	47	66	49	78	69	73	75	86
<i>Driver</i>	23	47	29	48	43	46	48	59
<i>Passenger</i>	20	16	14	23	20	24	24	25
Motorcyclist	16	23	17	14	21	25	35	46
Pedal cyclist	..	9	12	8	11	15	15	24
Pedestrian	6	13	6	12	8	7	6	7
Other or unknown	..	0	..	0	..	..	0	0
NT								
Occupant of MV ^(a)	104	96	96	95	96	97	130	127
<i>Driver</i>	53	44	44	48	47	43	58	58
<i>Passenger</i>	46	45	42	39	44	50	67	61
Motorcyclist	18	20	20	25	17	29	36	34
Pedal cyclist	6	13	5	10	11	14	9	15
Pedestrian	37	20	21	20	24	13	14	23
Other or unknown	..	..	..	..	8	..	..	..
Australia^(b)								
Occupant of MV ^(a)	4,678	4,950	4,661	4,867	5,065	5,237	5,299	5,182
<i>Driver</i>	2,783	2,926	2,802	3,057	3,183	3,239	3,280	3,280
<i>Passenger</i>	1,601	1,665	1,553	1,536	1,615	1,736	1,749	1,639
Motorcyclist	1,115	1,214	1,188	1,287	1,442	1,614	1,867	1,915
Pedal cyclist	523	543	588	654	721	777	869	917
Pedestrian	1,119	1,042	998	990	1,057	1,027	1,125	1,044
Other or unknown	44	33	39	73	80	95	79	99

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

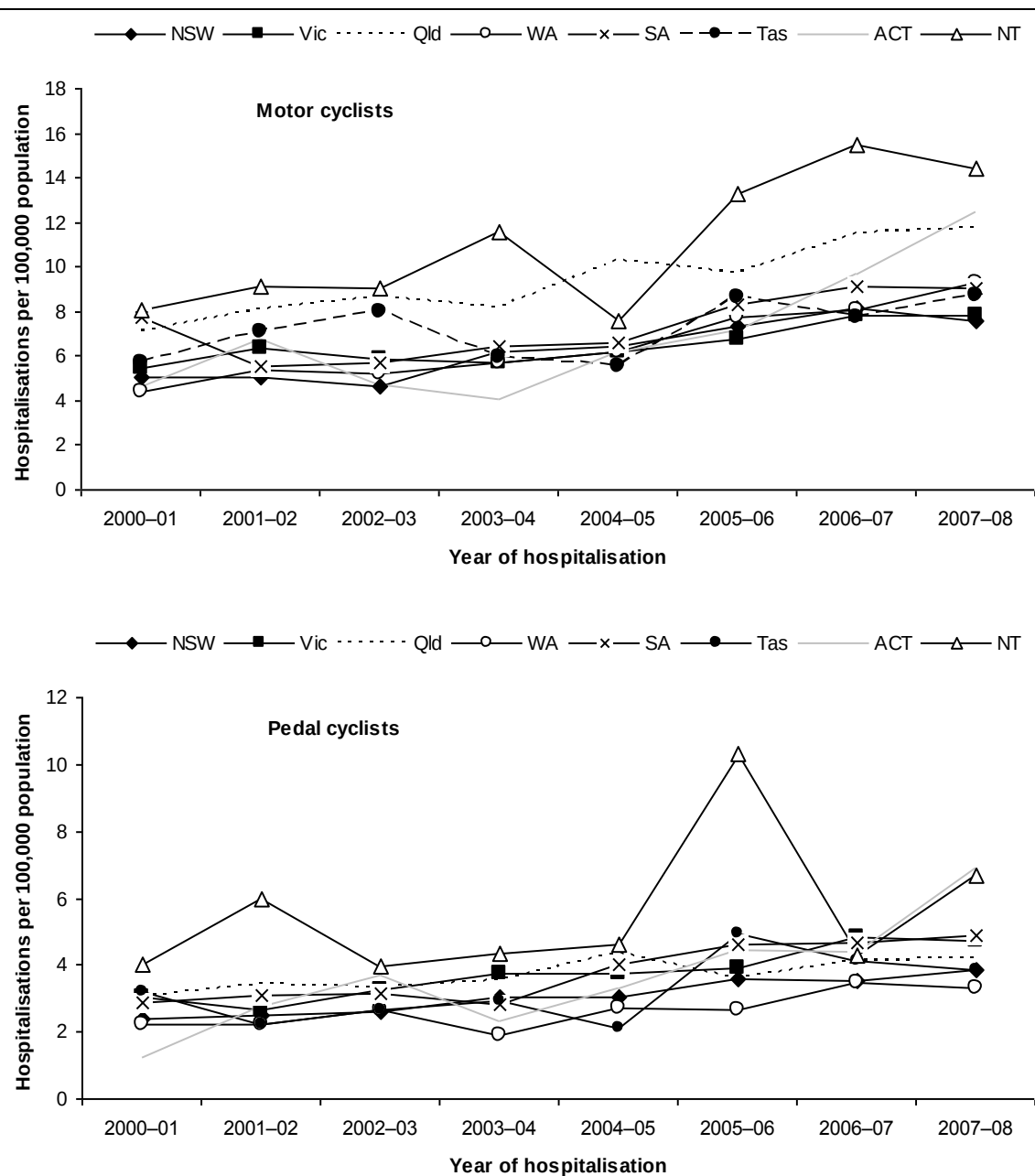
(b) Includes cases for other territories such as Cocos (Keeling) Islands, Norfolk Island and Christmas Island and cases where state and territory of residence is not specified.

.. Small counts are omitted ($n < 5$).



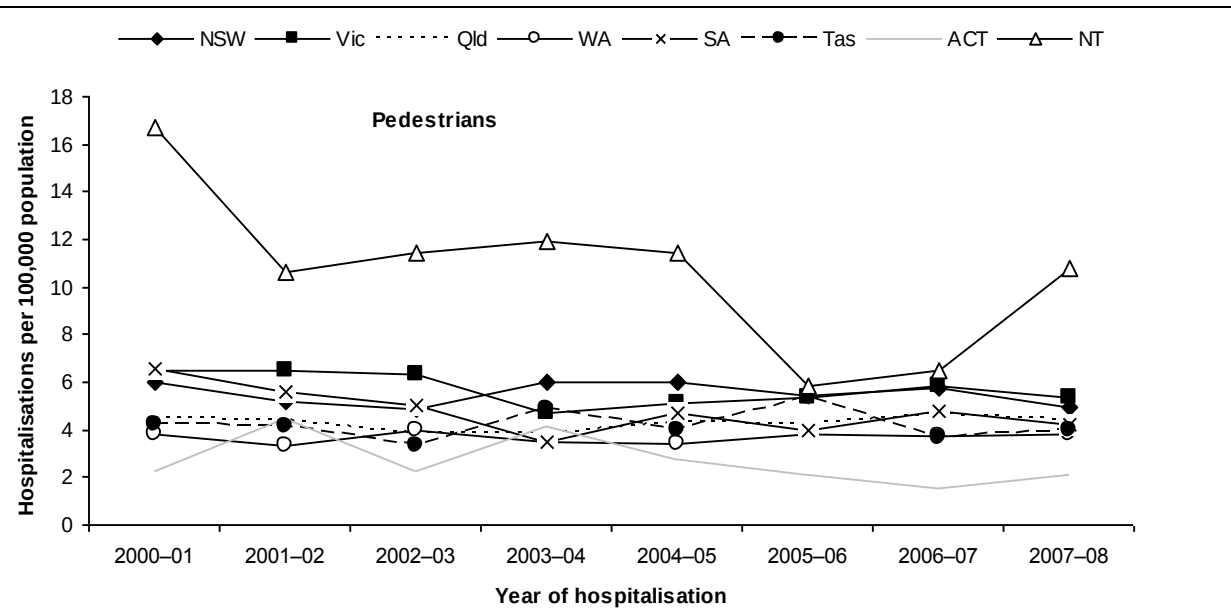
Note: Table corresponding to this figure can be found in Appendix 1, Table A1.2.

Figure 3.2: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for drivers and passengers of motor vehicles by state and territory of residence, Australia, 2000–01 to 2007–08



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.2.

Figure 3.3: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for motorcyclists and pedal cyclists by state and territory of residence, Australia, 2000-01 to 2007-08



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.2.

Figure 3.4: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for pedestrians by state and territory of residence, Australia, 2000-01 to 2007-08

3.2 Rates based on number of registered vehicles

Overview

Rates based on the number of motorcyclists seriously injured with high threat to life per 10,000 registered motorcycles were consistently 8–10 times as high as rates for occupants of motor vehicles per 10,000 registered motor vehicles over the 8-year period from 2000–01 to 2007–08 (Figure 3.5).

Rates based on the number of occupants of motor vehicles seriously injured with high threat to life per 10,000 registered motor vehicles remained relatively steady over the 8-year period from 2000–01 to 2007–08 for all jurisdictions and nationally (Table 3.3 and Figure 3.6). Rates for the Northern Territory remained consistently two or more times as high over the entire period when compared to other jurisdictions. A similar pattern in rates was observed for motorcyclists when compared to occupants of motor vehicles, although despite fluctuations, there were overall upward trends for the Australian Capital Territory and the Northern Territory. Also, the difference between rates for the Northern Territory and the other jurisdictions was not as pronounced for motorcyclists as for occupants of motor vehicles. Over the 8-year period, rates for motorcyclists ranged from 7 times as high as rates for occupants of motor vehicles in the Northern Territory to 11 times as high for Queensland.

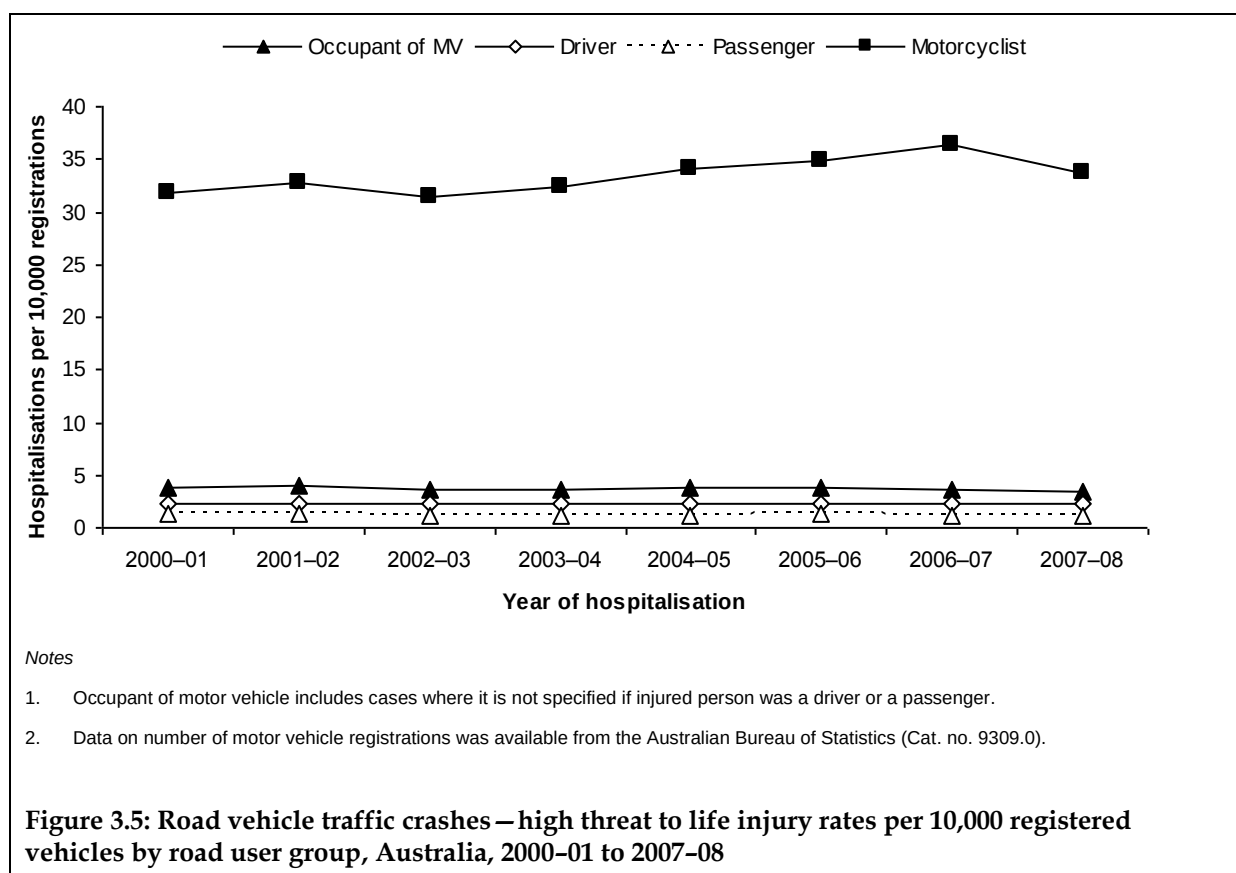
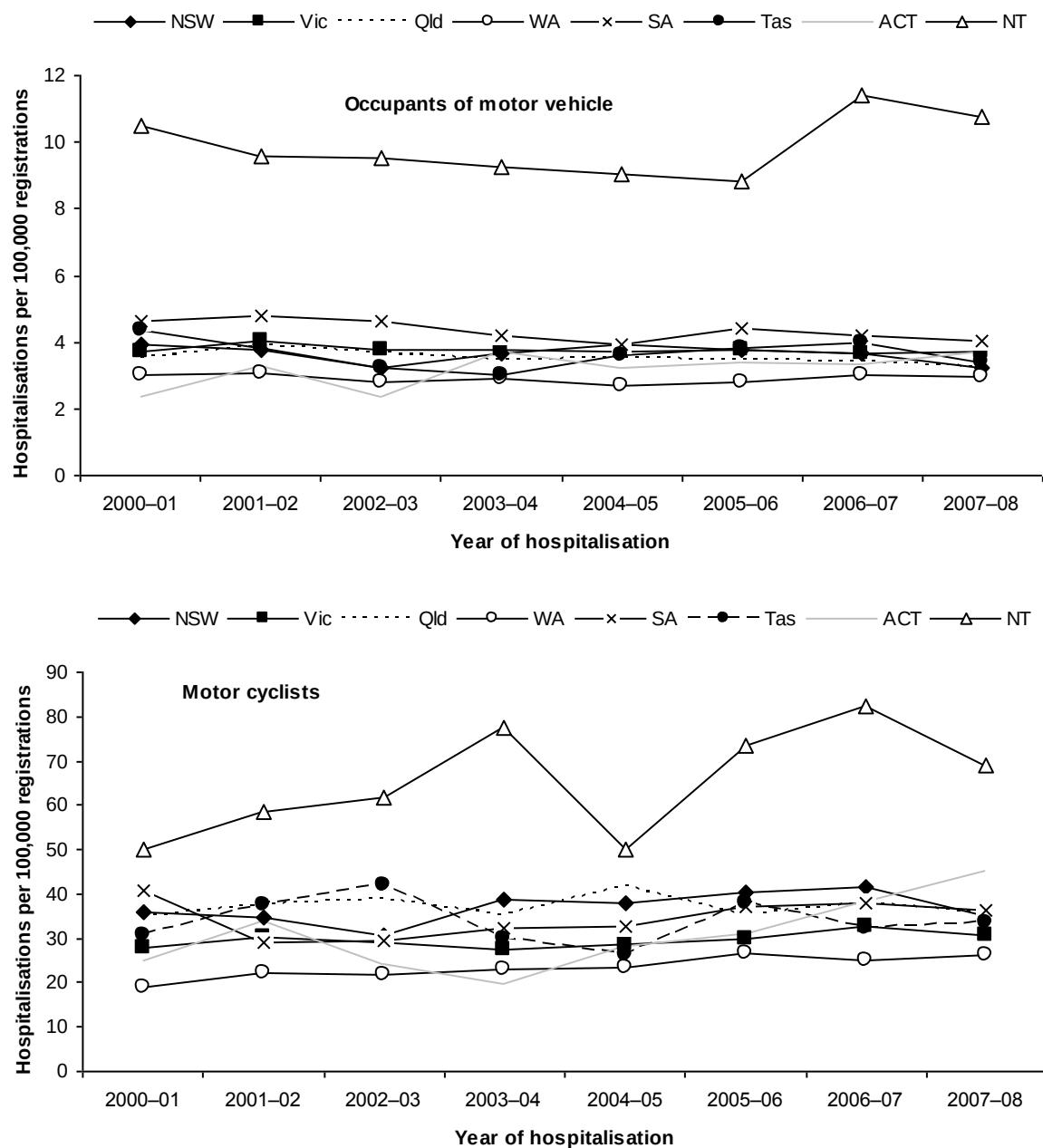


Table 3.3: Persons seriously injured with high threat to life due to road vehicle traffic crashes by state and territory of residence and road user group, rate per 10,000 registered vehicles, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW								
Occupant of MV	3.90	3.74	3.23	3.66	3.93	3.78	3.68	3.24
Motorcyclist	35.9	34.8	30.6	38.6	38.0	40.2	41.6	35.3
Vic								
Occupant of MV	3.72	4.02	3.77	3.75	3.73	3.77	3.65	3.72
Motorcyclist	27.7	30.1	28.9	27.6	28.8	30.0	32.9	30.5
Qld								
Occupant of MV	3.49	3.85	3.68	3.43	3.52	3.47	3.40	3.24
Motorcyclist	34.6	37.5	38.9	35.0	41.4	35.2	37.7	35.6
WA								
Occupant of MV	3.03	3.08	2.78	2.92	2.68	2.81	3.03	2.97
Motorcyclist	19.0	22.4	21.7	22.8	23.4	26.6	24.8	26.1
SA								
Occupant of MV	4.64	4.78	4.65	4.19	3.93	4.44	4.21	4.05
Motorcyclist	40.8	29.2	29.5	32.3	32.6	37.3	37.9	36.2
Tas								
Occupant of MV	4.34	3.80	3.24	2.99	3.60	3.82	3.97	3.40
Motorcyclist	30.9	37.5	41.9	29.9	26.4	38.1	32.2	33.3
ACT								
Occupant of MV	2.39	3.28	2.37	3.74	3.25	3.38	3.33	3.71
Motorcyclist	24.9	33.9	24.2	19.7	28.4	31.2	38.3	45.3
NT								
Occupant of MV	10.48	9.56	9.50	9.24	9.02	8.81	11.42	10.76
Motorcyclist	50.1	58.6	61.7	77.4	50.1	73.4	82.5	69.0
Australia								
Occupant of MV	3.86	3.98	3.65	3.71	3.75	3.77	3.71	3.52
Motorcyclist	31.8	32.7	31.5	32.5	34.2	34.9	36.4	33.7

Note: Data on number of motor vehicle registrations available from the Australian Bureau of Statistics (Cat. no. 9309.0).



Note: Data on number of motor vehicle registrations was available from the Australian Bureau of Statistics (Cat. no. 9309.0).

Figure 3.6: Road vehicle traffic crashes – high threat to life injury rates per 100,000 vehicle registrations for occupants of motor vehicles and motorcyclists by state and territory of residence, Australia, 2000-01 to 2007-08

Motorcyclist comparisons by different parameters

Table 3.4 and Figure 3.7 compare rates of serious injury with high threat to life for motorcyclists by different parameters. Rates tended to increase over time when looked at in terms of number of injuries per 100,000 population or per 100 million kilometres travelled. In contrast, when looked at in terms of number of injuries per 10,000 motorcycle registrations, the rate remained relatively steady over time. That is, injury risk per registered motorcycle did not change much. However, the number of registered motorcycles rose faster than population growth during the period. Hence, case numbers of seriously injured motorcyclists rose, as did the population-based rate.

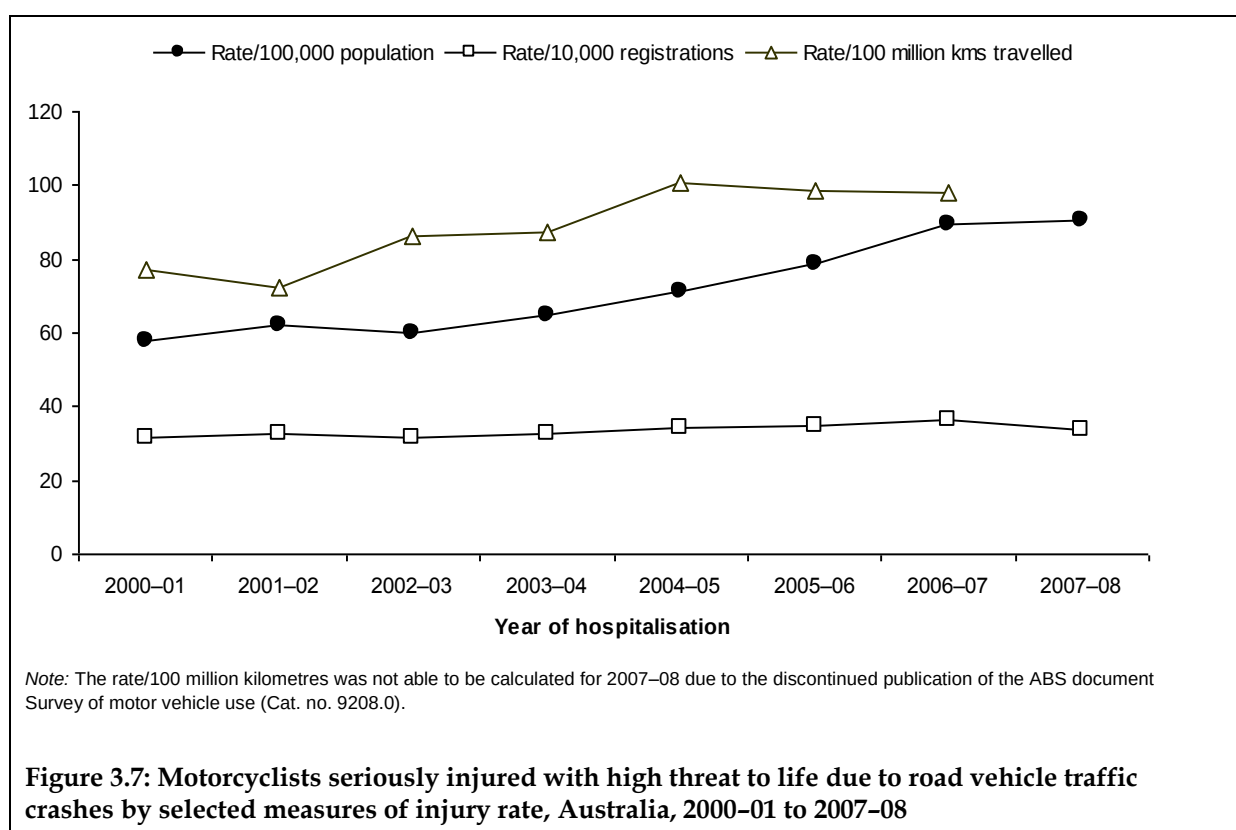
Table 3.4: Motorcyclists seriously injured with high threat to life due to road vehicle traffic crashes by selected indicators, Australia, 2000–01 to 2007–08

Indicator	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Hospitalisations	1,115	1,214	1,188	1,287	1,442	1,614	1,867	1,915
Rate/100,000 population	5.8	6.2	6.0	6.5	7.1	7.9	9.0	9.0
Rate/10,000 registrations ^(a)	31.8	32.7	31.5	32.5	34.2	34.9	36.4	33.7
Rate/100 million kms travelled ^(b)	77.0	72.2	86.3	87.1	100.9	98.4	98.0	n.a.

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

(b) Data on kilometres travelled by motorcycles available from the Australian Bureau of Statistics (Cat. no. 9208.0).

n.a. not available.

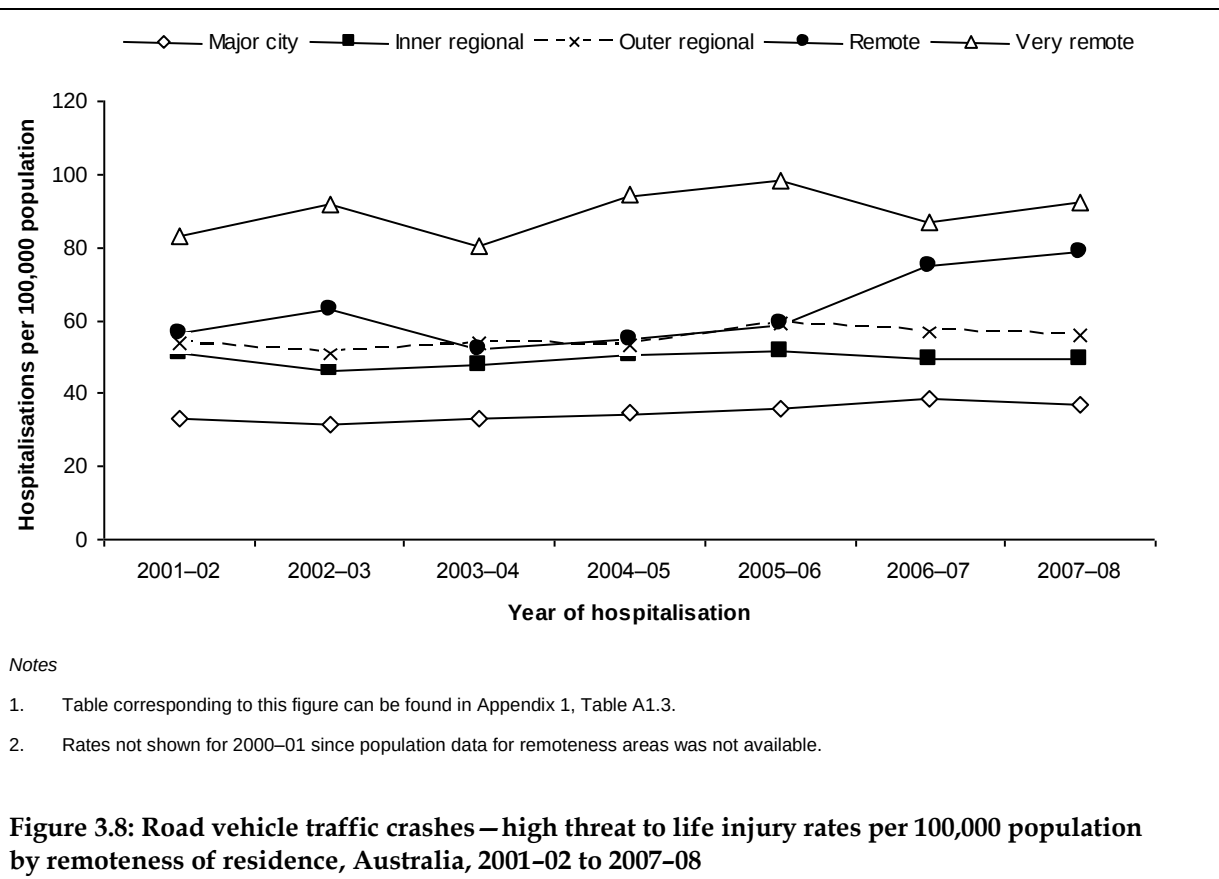


3.3 Remoteness of residence

For all remoteness areas except the very remote area, there was a noticeable upward trend in the number of persons seriously injured with high threat to life over the 8-year period from 2000–01 to 2007–08 (Table 3.5). Persons living in remote areas recorded the highest rate of increase with an annual rate of increase of 6.1% (95% CI: 3.3%, 9.0%), while persons living in major cities and outer regional areas recorded smaller, but significant average annual rates of increase (Figure 3.8). The rates for persons living in inner regional and very remote areas did not change significantly. There was a relatively dramatic rise in rates in the remote region between 2005–06 to 2007–08 from 59.0 to 78.5 serious injuries per 100,000 population, representing a 33% increase. Most of this rise was attributed to increases in Western Australia and the Northern Territory.

Table 3.5: Persons seriously injured with high threat to life due to road vehicle traffic crashes by remoteness of residence, Australia, 2000–01 to 2007–08

Remoteness area	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Major city	4,449	4,441	4,295	4,590	4,937	5,115	5,606	5,514
Inner regional	1,681	1,880	1,751	1,834	1,962	2,026	1,998	2,020
Outer regional	908	984	933	977	976	1,111	1,088	1,079
Remote	160	171	187	159	166	181	230	243
Very remote	140	139	157	130	149	162	143	151
Remoteness not reported	141	167	151	181	175	155	174	150
Total	7,479	7,782	7,474	7,871	8,365	8,750	9,239	9,157



State or territory of residence

Trends in counts for road vehicle traffic crashes for those with life-threatening injuries by state or territory of residence and remoteness area over the 8-year period from 2000–01 to 2007–08 are presented in Table 3.6. Trends in age-standardised serious injury rates for those residing in the Major city zone are presented in Figure 3.9. Major observations indicated that:

- All jurisdictions with a major city zone, recorded an upward trend in the number of persons seriously injured with high threat to life. The largest increase was recorded by the Australian Capital Territory where numbers of seriously injured increased by 123% from 73 in 2000–01 to 163 in 2007–08, while the next largest increase was 57% for Queensland. The Australian Capital Territory had the largest average annual rate of increase of 6.8% (3.2%, 10.5%).
- Apart from South Australia, all jurisdictions with an inner regional zone recorded an upward trend in the number of persons seriously injured with high threat to life. The largest increase was recorded by Western Australian where numbers of seriously injured increased by 73% from 73 in 2000–01 to 126 in 2007–08. Tasmania recorded the lowest increase of 3%, while South Australia recorded a decrease of 29%. The numbers of seriously injured in the Australian Capital Territory were not presented due to low case numbers.

- Apart from Victoria and South Australia, all jurisdictions with an outer regional zone recorded an upward trend in the number of persons seriously injured with high threat to life. The largest increase was recorded by Western Australian where numbers increased by 77% from 64 in 2000–01 to 113 in 2007–08, while South Australia recorded a slight downward trend.
- Except for Victoria which recorded small case numbers, all jurisdictions with a Remote zone recorded an upward trend in the number of persons seriously injured with high threat to life. The largest increase was recorded by Western Australia where numbers increased by 109% from 34 in 2000–01 to 71 in 2007–08, while the next largest increase was 64% for Queensland.

Table 3.6: Persons seriously injured with high threat to life due to road vehicle traffic crashes by state or territory of residence and remoteness of residence, Australia, 2000–01 to 2007–08

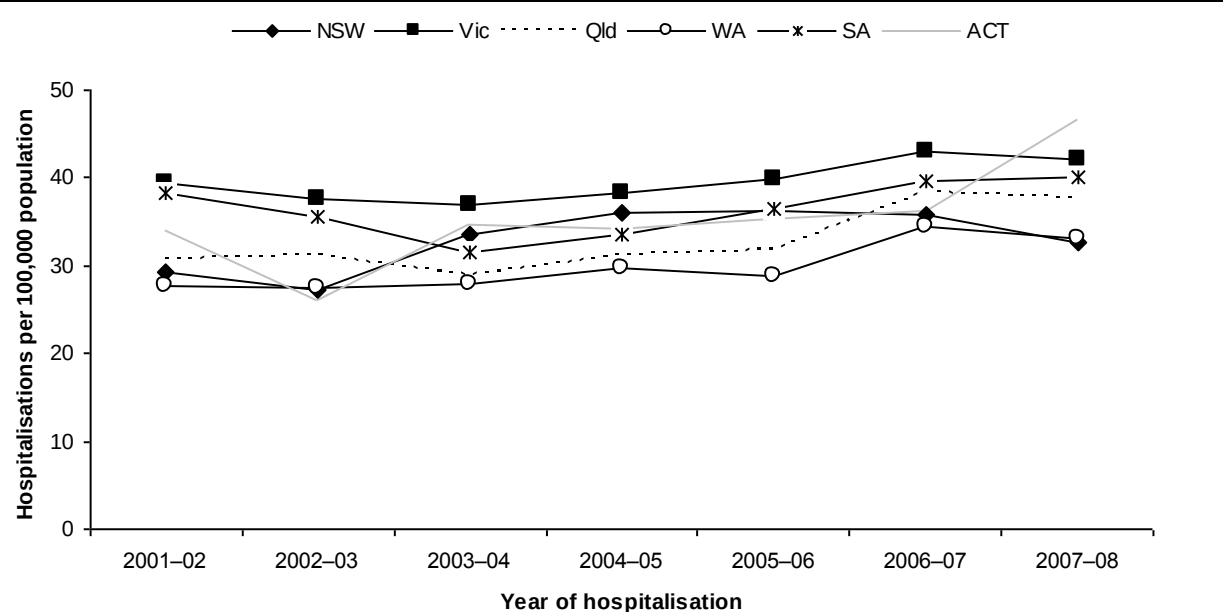
Remoteness area	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW								
Major city	1,545	1,404	1,327	1,649	1,788	1,806	1,810	1,680
Inner regional	532	590	519	588	635	629	687	650
Outer regional	211	234	177	210	210	244	252	210
Remote	19	10	24	23	15	17	21	28
Very remote	..	..	0	..	0	5	..	..
Vic								
Major city	1,403	1,440	1,393	1,397	1,470	1,557	1,709	1,706
Inner regional	407	523	528	497	505	515	508	543
Outer regional	115	118	120	111	105	126	115	118
Remote	..	0	7	..	..	..	..	..
Qld								
Major city	617	674	703	674	745	776	965	967
Inner regional	389	450	424	466	540	478	452	466
Outer regional	252	299	293	281	350	377	363	342
Remote	36	40	44	37	28	44	41	59
Very remote	35	43	43	31	40	26	29	32
WA								
Major city	391	382	383	398	432	426	522	518
Inner regional	73	80	67	64	72	100	99	126
Outer regional	64	87	80	97	51	102	84	113
Remote	34	44	41	46	41	44	64	71
Very remote	42	34	47	35	49	54	43	30

(continued)

Table 3.6 (continued): Persons seriously injured with high threat to life due to road vehicle traffic crashes by state or territory of residence and remoteness of residence, Australia, 2000–01 to 2007–08

Remoteness area	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
SA								
Major city	420	431	405	361	390	428	470	480
Inner regional	162	139	121	126	116	171	127	115
Outer regional	118	101	127	127	113	113	110	110
Remote	27	30	39	25	38	35	42	30
Very remote	7	10	12	9	6	11	21	27
Tas								
Inner regional	116	97	92	92	93	133	125	120
Outer regional	82	83	72	71	83	92	90	91
Remote	..	..	5	..	6	5	5	..
Very remote	..	..	..	..	..	..	..	..
ACT								
Major city	73	110	84	111	112	122	130	163
Inner regional	..	..	..	..	0	0	0	0
NT								
Outer regional	66	62	64	80	64	57	74	95
Remote	41	43	27	23	36	34	54	49
Very remote	51	45	53	48	53	65	43	56
Australia								
Major city	4,449	4,441	4,295	4,590	4,937	5,115	5,606	5,514
Inner regional	1,681	1,880	1,751	1,834	1,962	2,026	1,998	2,020
Outer regional	908	984	933	977	976	1,111	1,088	1,079
Remote	160	171	187	159	166	181	230	243
Very remote	140	139	157	130	149	162	143	151

.. Small counts are omitted ($n < 5$).



Notes

1. Table corresponding to this figure can be found in Appendix 1, Table A1.4.
2. Rates not shown for 2000–01 since population data for remoteness areas was not available.

Figure 3.9: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for residents of major cities by state or territory of residence, Australia, 2001–02 to 2007–08

3.4 Age and sex

3.4.1 Overview

For both males and females in age groups 15–24 years and older there was an upward trend in the number of persons seriously injured with high threat to life as a result of a road traffic accident over the 8-year period from 2000–01 to 2007–08 (Table 3.7). For males aged

5–14 years there was no discernible trend either up or down, while for males aged 0–4 years there was a downward trend over the period of interest. For females aged 0–4 years and 5–14 years there was a downward trend over the 8-year period.

Males aged 15–24 years had the highest age-specific rates with rates consistently close to 100 high threat to life injuries per 100,000 population over the period of interest (Figure 3.10). For males, those aged 45–64 years recorded the most significant rate of rise with an average annual increase of 6.4% (95% CI: 5.5%, 7.4%) while males aged 25–44 years and 65 years and over recorded significant but more modest increases in rates over the 8-year period. Rates for males aged 5–14 years and 15–24 years did not change significantly while rates for infants aged 0–4 years were the only rates to fall significantly, recording an average annual decrease of 6.5% (95% CI: 2.1%, 10.8%).

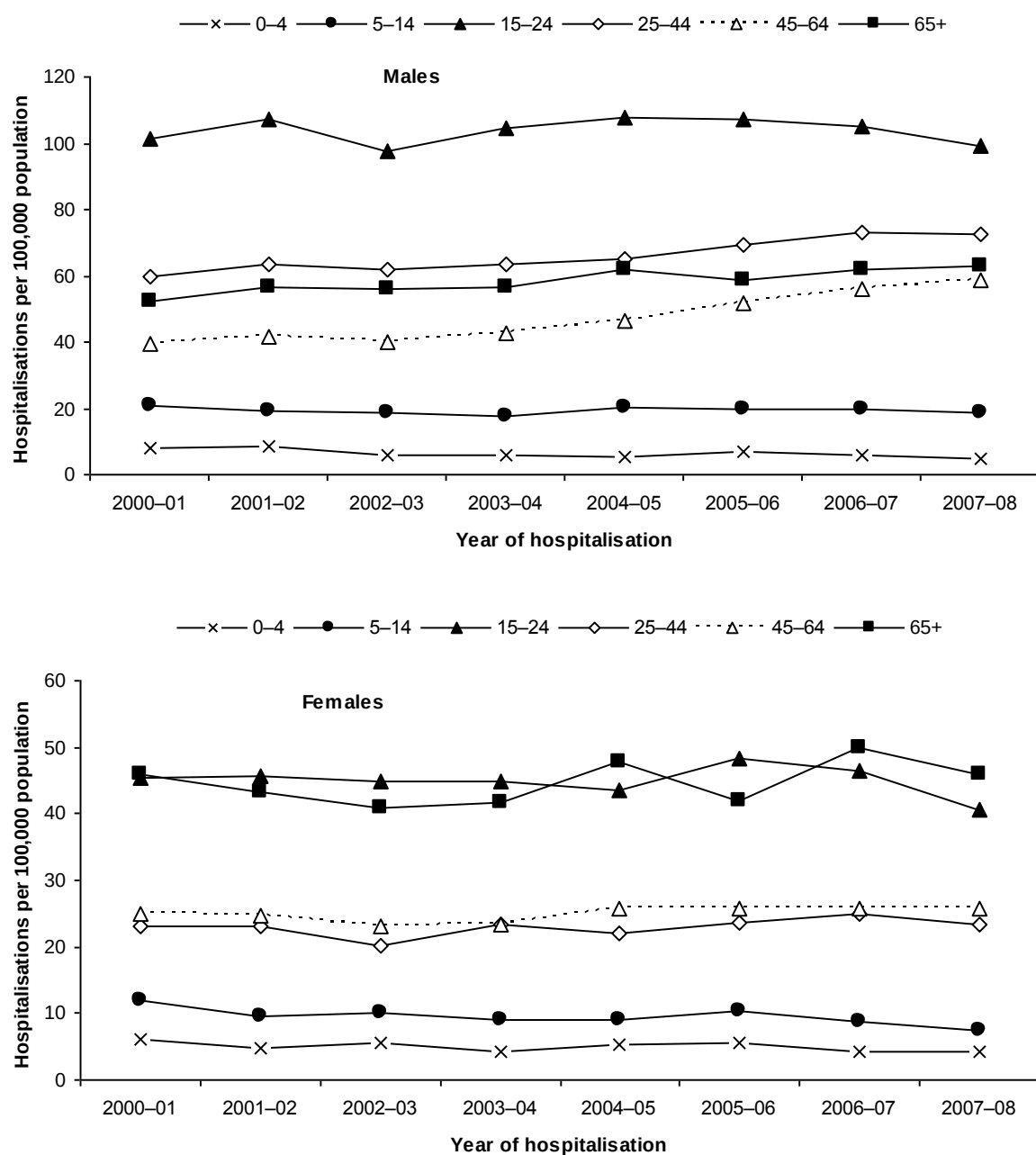
For females, those aged 15–24 years and those aged 65 years and over had the highest age-specific rates with rates fluctuating between 40 and 50 high threat to life injuries per 100,000 population over the period of interest (Figure 3.10). Females aged 5–14 years were the only age group to experience a significant change in rates over the 8-year period with rates decreasing by an average annual rate of 4.1% (95% CI: 1.4%, 6.6%).

Rates for females were lower than for males across all age groups. For age groups 0–4 years and 65 years and over, male rates were only moderately higher than female rates, while for all other age groups, male rates were generally two to three times as high as female rates.

Table 3.7: Persons seriously injured with high threat to life due to road vehicle traffic crashes by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
0–4								
Males	54	57	37	40	36	46	40	32
Females	38	30	35	27	33	36	27	28
Persons	92	87	72	67	69	82	67	60
5–14								
Males	288	269	260	244	285	279	277	261
Females	156	126	132	121	119	138	117	101
Persons	444	395	392	366 ^(a)	404	417	394	362
15–24								
Males	1,356	1,457	1,349	1,469	1,543	1,561	1,564	1,513
Females	585	600	599	608	598	676	661	588
Persons	1,941	2,057	1,948	2,077	2,141	2,238 ^(a)	2,225	2,101
25–44								
Males	1,726	1,843	1,803	1,855	1,906	2,049	2,184	2,192
Females	677	681	598	691	651	700	752	712
Persons	2,403	2,524	2,401	2,546	2,557	2,749	2,936	2,904
45–64								
Males	877	953	935	1,024	1,147	1,297	1,440	1,542
Females	550	557	538	561	637	650	670	687
Persons	1,427	1,510	1,473	1,585	1,785 ^(a)	1,947	2,110	2,229
65+								
Males	556	618	621	642	721	701	761	799
Females	616	591	567	588	687	616	746	701
Persons	1,172	1,209	1,188	1,230	1,409 ^(a)	1,317	1,507	1,500
All ages								
Males	4,857	5,197	5,005	5,274	5,638	5,933	6,266	6,340 ^(a)
Females	2,622	2,585	2,469	2,596	2,725	2,816	2,973	2,817
Persons	7,479	7,782	7,474	7,871 ^(a)	8,365 ^(a)	8,750 ^(a)	9,239	9,157 ^(a)

(a) Number of persons is higher than sum of males and females in some instances where sex of patient is undetermined.



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.5.

Figure 3.10: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population by age and sex, Australia, 2000-01 to 2007-08

3.4.2 Motor vehicle occupants

For males in age groups 15–24 years and older there was a modest upward trend in the number of persons seriously injured with high threat to life as a result of being an occupant of a motor vehicle involved in a road crash over the 8-year period from 2000–01 to 2007–08 (Table 3.8). Males in age groups 0–4 years and 15–24 years recorded a downward trend over the 8-year period. Females aged 45–54 years and 65 years older recorded modest upward trends over the period of interest, while for females aged 0–4 years, 15–24 years and 25–44 years there was no discernible trend either up or down. Females aged 5–14 years recorded a modest downward trend over the 8-year period.

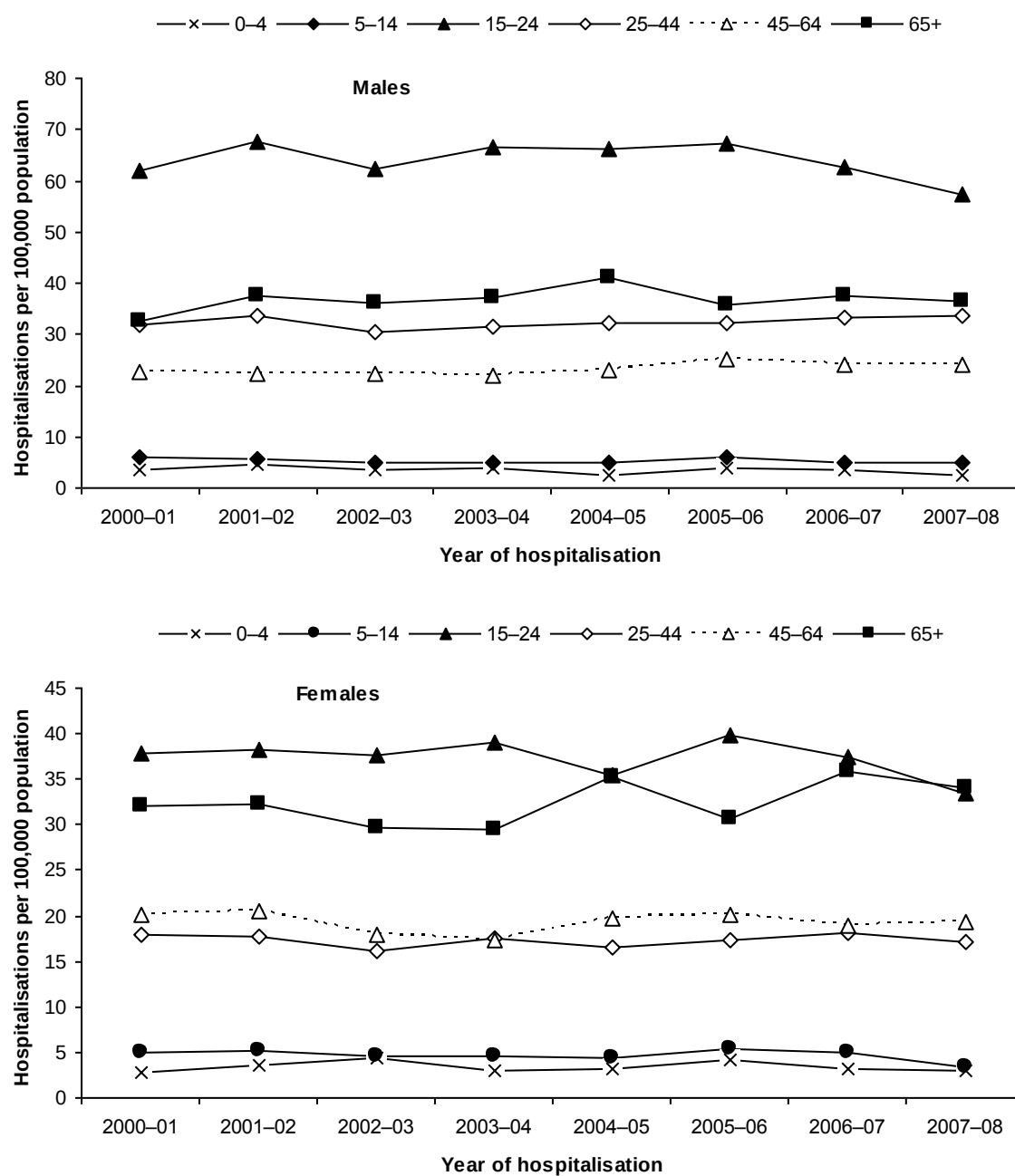
For males, those aged 15–24 years had the highest age-specific rates with rates fluctuating between 60 and 70 high threat to life injuries per 100,000 population over the period of interest (Figure 3.11). Males aged 45–64 years were the only age group to experience a significant change in rates over the 8-year period with rates increasing by an average annual rate of 1.6% (95% CI: 0.3%, 2.9%).

For females, those aged 15–24 years and those aged 65 years and over had the highest age-specific rates with rates fluctuating between 30 and 40 high threat to life injuries per 100,000 population over the period of interest (Figure 3.11). Females aged 0–4 years had the lowest rates. Females aged 65 years and over were the only age group to experience a significant change in rates over the 8-year period with rates increasing by an average annual rate of 1.5% (95% CI: 0.1%, 3.0%). Rates for males were approximately two times as high as female rates for persons aged 15–24 years and 25–44 years, while rates for all other age groups were similar for both sexes.

Table 3.8: Motor vehicle occupants seriously injured with high threat to life due to road vehicle traffic crashes by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
0–4								
Males	24	31	23	26	17	27	25	17
Females	18	22	27	19	20	26	20	20
Persons	42	53	50	45	37	53	45	37
5–14								
Males	84	81	71	71	71	87	70	71
Females	66	68	60	61	58	71	66	45
Persons	150	149	131	133 ^(a)	129	158	136	116
15–24								
Males	829	918	861	935	946	982	932	874
Females	488	503	502	528	487	557	534	485
Persons	1,317	1,421	1,363	1,463	1,433	1,539	1,466	1,359
25–44								
Males	922	979	885	927	942	949	996	1,014
Females	527	524	474	518	489	518	543	521
Persons	1,449	1,503	1,359	1,445	1,431	1,467	1,539	1,535
45–64								
Males	500	509	526	524	564	632	624	637
Females	444	465	418	417	484	508	494	515
Persons	944	974	944	941	1,049 ^(a)	1,140	1,118	1,152
65+								
Males	346	408	402	423	478	430	460	462
Females	430	442	412	417	507	450	535	520
Persons	776	850	814	840	986 ^(a)	880	995	982
All ages								
Males	2,705	2,926	2,768	2,906	3,018	3,107	3,107	3,076 ^(a)
Females	1,973	2,024	1,893	1,960	2,045	2,130	2,192	2,106
Persons	4,678	4,950	4,661	4,867 ^(a)	5,065 ^(a)	5,237	5,299	5,182 ^(a)

(a) Number of persons is higher than sum of males and females in some instances where sex of patient is undetermined.



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.6.

Figure 3.11: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for motor vehicle occupants by age and sex, Australia, 2000-01 to 2007-08

3.4.3 Motorcyclists

The focus of this chapter is on injuries sustained due to road vehicle accidents occurring on public roads (i.e. traffic accidents). However, due to the relatively high proportion of injuries sustained whilst riding motorcycles in non-traffic (i.e. off-road) settings, this section contains data for both road vehicle traffic and non-traffic crashes. Chapter 4 reports on trends in high threat to life injury for all types of road users where location of accident is not specified as being on a public road, while Chapter 5 briefly reports on comparisons in trends for high threat to life injury between traffic and non-traffic accidents.

3.4.3.1 Road traffic crashes

For males in all age groups except those aged 0–4 years, there were marked upward trends in the number of persons seriously injured with high threat to life as a result of being involved in an accident while riding a motorcycle on a public road over the 8-year period from 2000–01 to 2007–08 (Table 3.9). For those aged 45–64, the number of those seriously injured over this period almost tripled from 178 to 506 while for those aged 65 years and over, the number of those seriously injured more than doubled. Males aged 0–4 years were excluded from the analysis due to very low cases numbers.

For females in age groups 25–44 years and older there were marked upward trends in the number of persons seriously injured over the 8-year period. Females aged 15–24 years recorded a modest upward trend, while for females aged 5–14 years there was no discernible trend either up or down over the period of interest. For females aged 45–64 years the number of those seriously injured over this period more than tripled from 16 to 49. As with males, females aged 0–4 years were excluded from the analysis due to very low cases numbers.

Males aged 15–24 years and 25–44 years had the highest age-specific rates (Figure 3.12). For males, rates in all age groups increased significantly over the 8-year period. The largest increases in rates were recorded in the 45–64 years and 65 years and over age groups which recorded average annual increases of 15.5% (95% CI: 13.3%, 17.6%) and 12.7% (95% CI: 7.1%, 18.5%) respectively.

While rates for females in the 15–24 year, 25–44 year and 45–64 year age groups were similar by the end of the 8-year period, the most significant increases in rates over this period were recorded by females aged 45–64 years and 25–44 years age groups which recorded average annual increases of 13.8% (95% CI: 7.4%, 20.6%) and 9.4% (95% CI: 4.7%, 14.3%) respectively. There were no significant changes in rates for any of the other age groups over the period of interest.

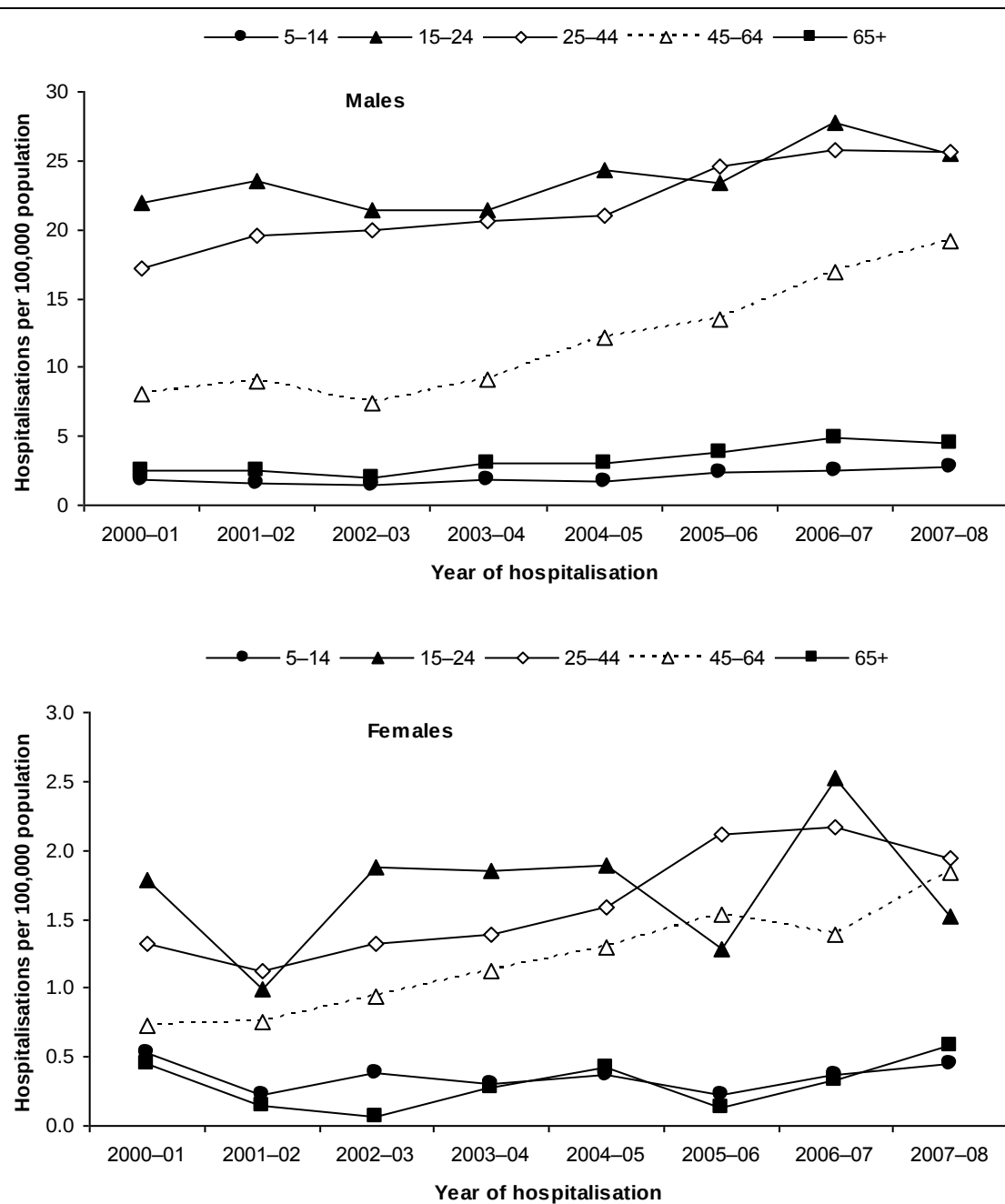
Rates for females were much lower than for males across all age groups. Rates on average across the 8-year period varied from six times as high for males as for females in the 5–14 year age group to almost 15 times as high for males as for females in the 15–24 year and 65 years and over age groups.

Table 3.9: Motorcyclists seriously injured with high threat to life due to a road traffic crash by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
5–14								
Males	26	22	21	25	24	33	36	40
Females	7	..	5	..	5	..	5	6
Persons	33	..	26	..	29	..	41	46
15–24								
Males	294	320	296	301	348	341	414	389
Females	23	13	25	25	26	18	36	22
Persons	317	333	321	326	374	360	450	411
25–44								
Males	500	571	583	606	619	725	771	776
Females	39	33	39	41	47	63	65	59
Persons	539	604	622	647	666	788	836	835
45–64								
Males	178	206	172	219	299	340	437	506
Females	16	17	22	27	32	39	36	49
Persons	194	223	194	246	331	379	473	555
65+								
Males	26	27	22	35	35	46	61	57
Females	6	..	..	..	6	..	5	9
Persons	32	..	..	..	41	..	66	66
All ages								
Males	1,024	1,146	1,096	1,186	1,326	1,487	1,720	1,770
Females	91	68	92	101	116	126	147	145
Persons	1,115	1,214	1,188	1,287	1,442	1,614	1,867	1,915

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

.. Small counts are omitted ($n < 5$). The omission of small counts also necessitated the omission of counts for persons.



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.7.

Figure 3.12: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for motorcyclists by age and sex, Australia, 2000-01 to 2007-08

3.4.3.2 Non-traffic (off-road) crashes

For motorcyclists aged 5–14 years, non-traffic (off-road) crashes accounted for between 70% and 80% of all non-traffic transport injuries with high threat to life each year in the 8-year period from 2000–01 to 2007–08 (Figure 3.13). For persons aged 15–24 years, on-traffic crashes accounted for between 40% and 50% of all high threat to life injuries over this period.

For males in all age groups except those aged 0–4 years, there were moderate upward trends in the number of persons seriously injured with high threat to life as a result of being involved in an accident while riding a motorcycle off-road over the 8-year period from 2000–01 to 2007–08 (Table 3.10). For males aged 45–64 years, the number of those who sustained high threat to life injuries over this period increased by over 80% from 78 to 143 while increases for the other age groups were more moderate. For females aged 15–24 years and older, there were upward trends in the numbers of high threat to life injuries over the 8-year period. Females aged 5–14 years recorded no discernible trend either up or down. Both males and females aged 0–4 years were excluded from the analysis due to very low cases numbers.

Males aged 15–24 years had the highest age-specific rates with rates consistently close to 20 high threat to life injuries per 100,000 population over the 8-year period (Figure 3.14). For males, those aged 45–64 years recorded the most significant increase in rates over the 8-year period with an average annual increase of 5.0% (95% CI: 1.8%, 9.2%). Males aged 5–14 years and 25–44 years also recorded significant but smaller rates of increases while those in the remaining age groups did not experience any significant change in rates. Females aged 25–44 years were the only age group to experience a significant change in rates over the 8-year period with rates increasing by an average annual rate of 8.2% (95% CI: 0.6%, 17.1%).

Rates for females were much lower than for males across all age groups. Rates on average across the 8-year period varied from 7 times as high for males than females in the 5–14 year age group to 25 times as high for males than females in the 25–44 year age group.

Motorcycle sport

Except for persons aged 65 years and over, there was a marked increase in the number of persons seriously injured with high threat to life while riding a motorcycle as part of a motorcycle sporting event over the 6-year period from 2002–03 to 2007–08 (Table 3.11). There was a doubling of high threat to life injuries for persons in age groups 15–24 years, 25–44 years and 45–64 years age groups over this period, while there was a 66% increase for persons aged 5–14.

Almost 44% of those seriously injured in the 5–14 year age group were injured while participating in a motorcycle sporting event. This percentage was close to 40% for those aged 15–24 years and 25–44 years.

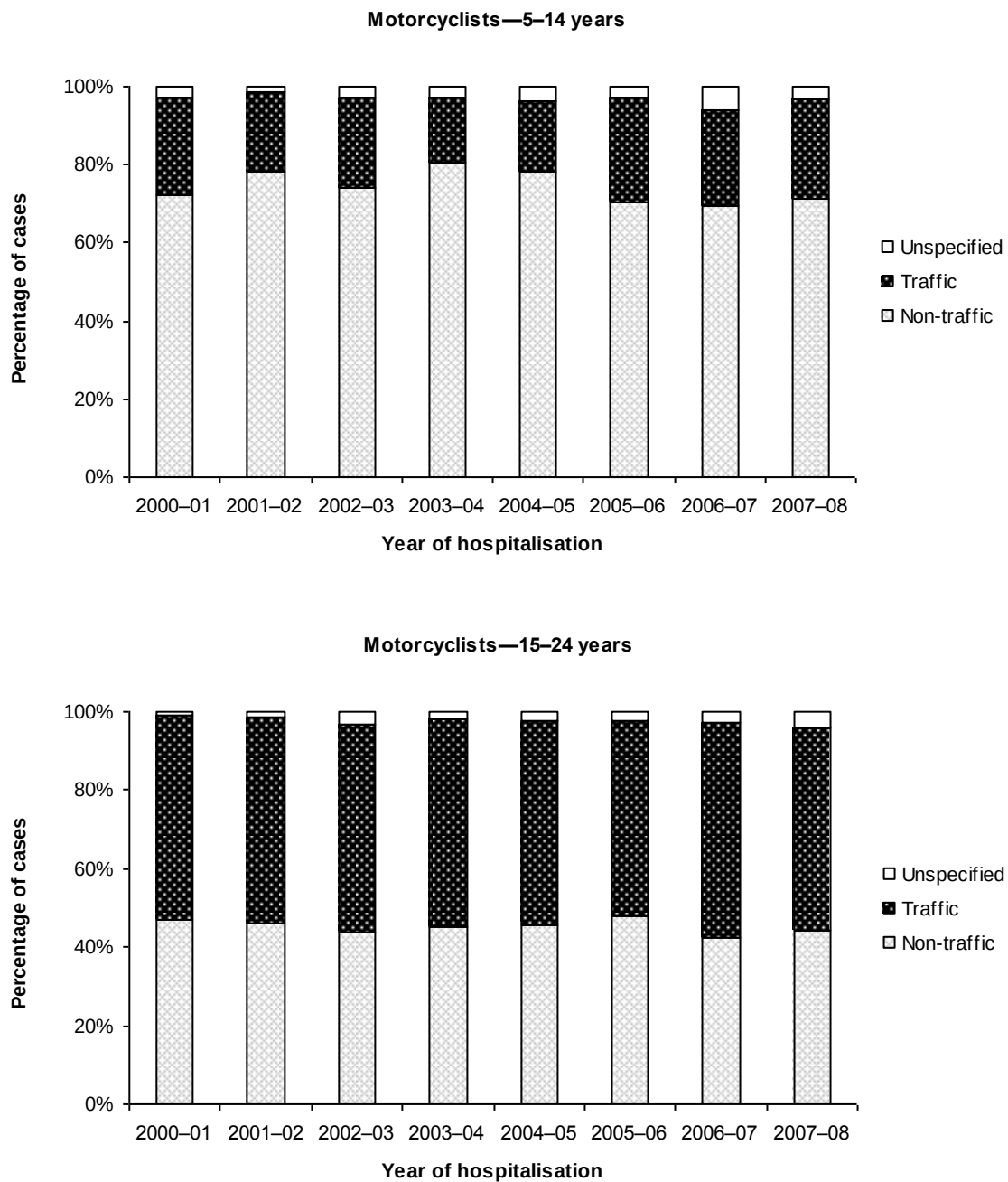


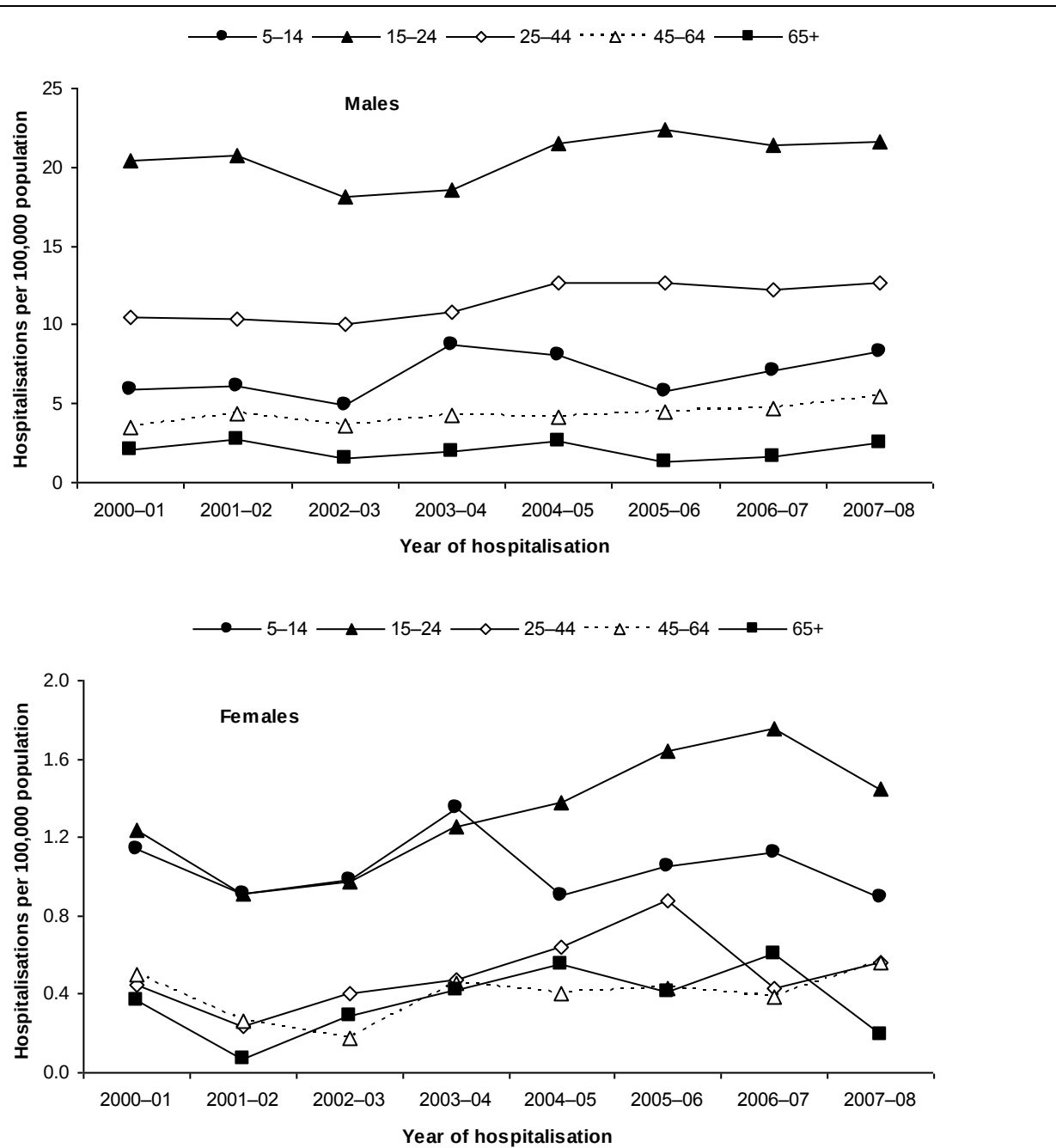
Figure 3.13: High threat to life injury of motorcyclists due to road traffic crashes – percentages by traffic, non-traffic and unspecified as to whether traffic or non-traffic by age groups, Australia, 2000-01 to 2007-08

Table 3.10: Motorcyclists seriously injured with high threat to life due to a non-traffic crash by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
5–14								
Males	81	85	69	123	114	82	100	117
Females	15	12	13	18	12	14	15	12
Persons	96	97	82	141	126	96	115	129
15–24								
Males	273	282	251	261	307	326	319	329
Females	16	12	13	17	19	23	25	21
Persons	289	294	264	278	326	349	344	350
25–44								
Males	303	301	292	317	372	374	364	383
Females	13	7	12	14	19	26	13	17
Persons	316	308	304	331	391	400	377	400
45–64								
Males	78	100	84	103	101	114	120	143
Females	11	6	..	11	10	11	10	15
Persons	89	106	..	114	111	125	130	158
65+								
Males	22	30	17	22	30	16	20	32
Females	5	..	..	6	8	6	9	..
Persons	27	..	..	28	38	22	29	..
All ages								
Males	758	800	716	829	926	917	926	1,010
Females	60	38	46	66	69	81	72	70
Persons	818	838	762	895	995	998	998	1,080

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

.. Small counts are omitted ($n < 5$). The omission of small counts also necessitated the omission of counts for persons.



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.8.

Figure 3.14: High threat to life injury rates per 100,000 population for motorcyclists involved in a non-traffic crash by age and sex, Australia, 2000-01 to 2007-08

Table 3.11: Motorcyclists seriously injured with high threat to life due to a non-traffic crash by age and activity at time of injury, Australia, 2002–03 to 2007–08

Age group	Year of hospitalisation					
	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
5–14						
Motorcycle sport	38	57	56	39	47	63
Other and unspecified activity	44	84	70	57	68	66
15–24						
Motorcycle sport	79	116	116	117	155	164
Other and unspecified activity	185	162	210	232	189	186
25–44						
Motorcycle sport	89	135	155	151	164	178
Other and unspecified activity	215	196	236	249	213	222
45–64						
Motorcycle sport	19	23	20	27	34	38
Other and unspecified activity	69	91	91	98	96	120
65+						
Motorcycle sport	..	..	..	..	..	..
Other and unspecified activity	19	26	36	21	27	34
All ages						
Motorcycle sport	227	333	349	336	402	445
Other and unspecified activity	535	562	646	662	596	635

Notes

1. Data for age group 0–4 not shown due to small case numbers, but included in 'All ages' totals.
 2. The totals for motorcycle sport are minimum estimates only. It is possible that some cases assigned to 'Other and unspecified activity' may have been involved in a motorcycle sport at the time of injury.
- .. Small counts are omitted ($n < 5$).

3.4.4 Pedal cyclists

The focus of this chapter is on injuries sustained due to road vehicle accidents occurring on public roads (i.e. traffic accidents). However, due to the relatively high proportion of injuries sustained whilst riding pedal cycles in non-traffic (i.e. off-road) settings, this section contains data for both road vehicle traffic and non-traffic crashes. Chapter 4 reports on trends in high threat to life injury for all types of road users where location of accident is not specified as being on a public road, while Chapter 5 briefly reports on comparisons in trends for high threat to life injury between traffic and non-traffic accidents.

3.4.4.1 Road traffic crashes

For both males and females aged 15–24 years and older there were upward trends in the number of persons seriously injured with high threat to life as a result of being involved in an accident while riding a pedal cycle on a public road over the 8-year period from 2000–01 to 2007–08 (Table 3.12). Males aged 5–14 years recorded a modest upward trend while for females in this age group there was no discernible trend either up or down. For males aged 45–64 years, the number of those who sustained high threat to life injuries over this period more than tripled from 83 to 265 while for those aged 65 years and over the number of those seriously injured more than doubled. For females 25–44 years and older there was an approximate doubling of numbers of high threat to life injuries over the period of interest. For ages 5–14 years and 15–24 years, numbers of high threat to life injuries remained relatively steady over the 8-year period for both sexes. Both males and females aged 0–4 years were excluded from the analysis due to very low case numbers.

For males, there was no one age group with distinctly higher rates of high threat to life injury when compared to other age groups (Figure 3.15). For males, those aged 45–64 years and 65 years and over recorded the most significant increases in rates over the 8-year period with average annual increases of 15.1% (95% CI: 12.3%, 18.0%) and 14.1% (95% CI: 9.7%, 18.7%) respectively. Rates for males aged 45–64 years began the 8-year period as the lowest of all age groups, but ended the period as the highest of all age groups. Males aged 25–44 years also recorded a significant but smaller rate of increase while those aged 5–14 years and 15–24 years did not experience any significant change in rates. Rates for females aged 5–14 years were generally higher than other age groups although not for all years. For females, those aged 65 years and over recorded the most significant increase in rates over the 8-year period with an average annual increase of 12.2% (95% CI: 1.0%, 24.6%). Females aged 25–44 years and 45–64 years also recorded significant but smaller rates of increase while those aged 5–14 years and 15–24 years did not experience any significant change in rates.

Rates for females were much lower than for males across all age groups. Rates for females were much lower than for males across all age groups. Rates on average across the 8-year period varied from four and a half times as high for males than females in the 5–14 year age group to almost 10 times as high for males than females in those aged 65 years and over.

Pedal cyclist and motorcyclist high threat to life injuries in males aged 45–64 years

For males aged 45–64 years, the combined total of high threat to life injuries due to motorcycle and pedal cycle on-road crashes as a percentage of all high threat to life injuries due to on-road crashes rose from almost 30% in 2000–01 to 50% in 2007–08 (Figure 3.16). Motorcyclist cases increased from just over 20% ($n = 178$) to almost 33% ($n = 506$) while pedal cyclist cases increased from almost 10% ($n = 83$) to just over 17% ($n = 265$). Increases were also observed for all other age groups for both males and females although absolute

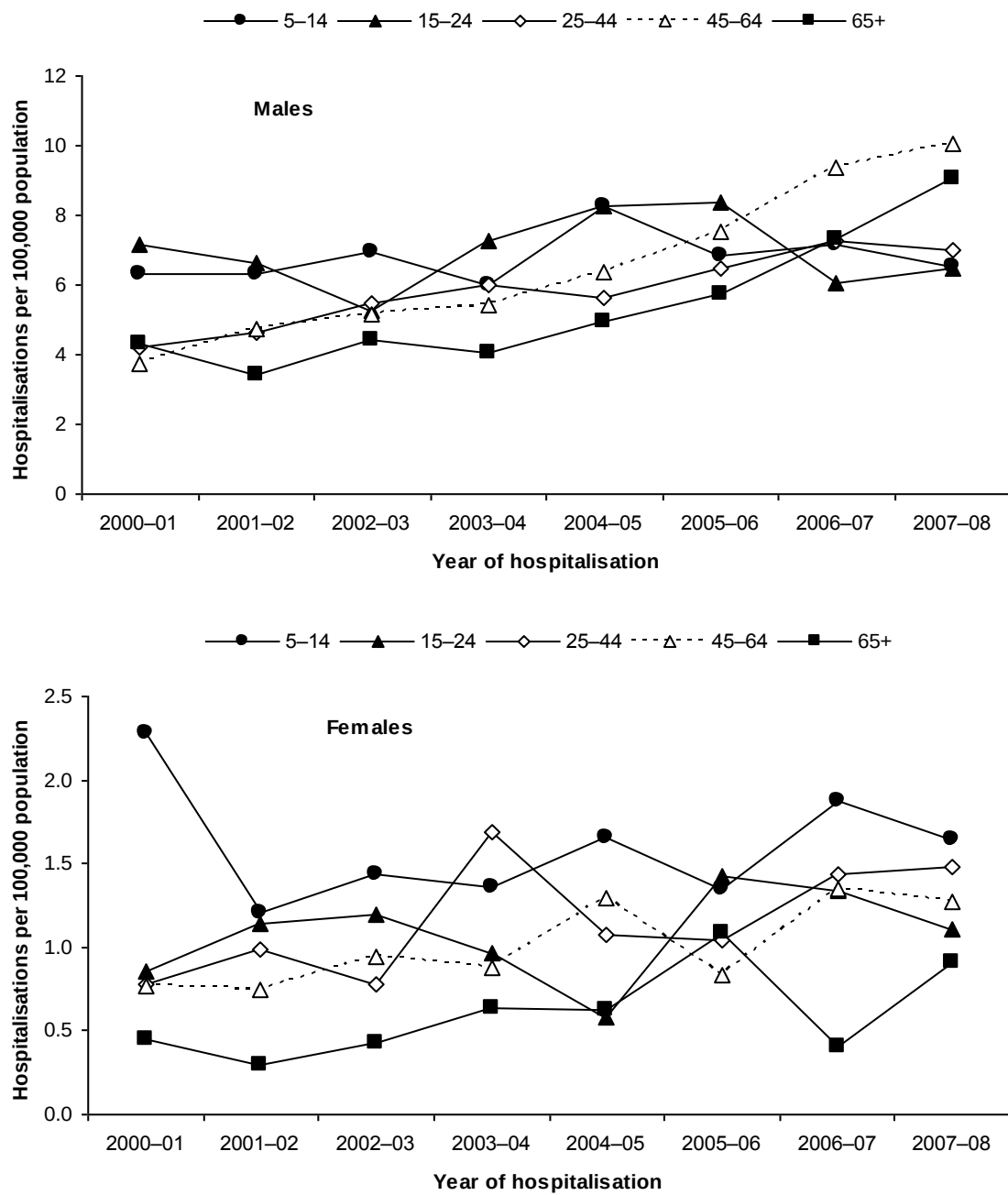
increases in combined percentages over the 8-year period were less than those experienced by males aged 45–64 years (data not shown).

Table 3.12 Pedal cyclists seriously injured with high threat to life due to a road traffic crash by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
5–14								
Males	87	88	97	84	116	96	101	92
Females	30	16	19	18	22	18	25	22
Persons	117	104	116	102	138	114	126	114
15–24								
Males	96	90	73	102	118	122	90	99
Females	11	15	16	13	8	20	19	16
Persons	107	105	89	115	126	142	109	115
25–44								
Males	122	135	160	176	166	192	217	212
Females	23	29	23	50	32	31	43	45
Persons	145	164	183	226	198	223	260	257
45–64								
Males	83	108	121	130	156	189	242	265
Females	17	17	22	21	32	21	35	34
Persons	100	125	143	151	188	210	277	299
65+								
Males	46	37	49	46	58	69	90	115
Females	6	..	6	9	9	16	6	14
Persons	52	..	55	55	67	85	96	129
All ages								
Males	435	462	501	542	618	671	741	786
Females	88	81	87	112	103	106	128	131
Persons	523	543	588	654	721	777	869	917

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

.. Small counts are omitted ($n < 5$). The omission of small counts also necessitated the omission of counts for persons.



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.9.

Figure 3.15: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for pedal cyclists by age and sex, Australia, 2000-01 to 2007-08

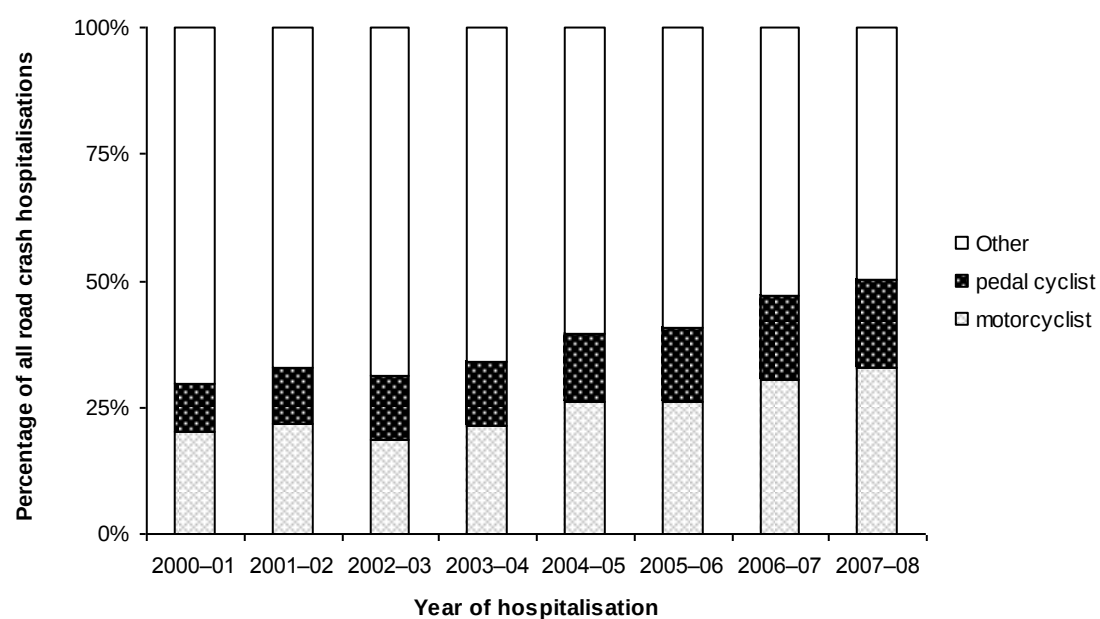


Figure 3.16: High threat to life injury of male motorcyclists and pedal cyclists aged 45-64 years due to road traffic crashes as a percentage of all high threat to life injury due to non-traffic crashes for males aged 45-64 years, Australia, 2000-01 to 2007-08

3.4.4.2 Non-traffic (off-road) crashes

For pedal cyclists aged 5–14 years, non-traffic accidents accounted annually for between 50% and 60% of all serious injury with high threat to life due to transport accidents for the 8-year period from 2000–01 to 2007–08 (Figure 3.17). For pedal cyclists aged 15–25 years, the percentage was lower, ranging between 40% and 50% of all serious injury due to transport accidents over this period.

Males aged 15–24 years, 24–44 years and 45–65 years recorded modest upward trends in the number of persons seriously injured with high threat to life as a result of being involved in an accident while riding a pedal cycle off-road over the 8-year period from 2000–01 to 2007–08 (Table 3.13). For males aged 5–14 years and 65 years and over there was no discernible trend either up or down over the 8-year period. For females there were moderate upward trends in the numbers with high threat to life injuries for those aged 45–64 years and 65 years and over. For females aged 15–24 years and 25–44 years, there was no discernible trend either up or down, while for females aged 5–14, there was a moderate down trend over the 8-year period.

Despite some fluctuations, age-specific rates for both males and females remained relatively steady for most age groups across the 8-year period (Figure 3.18). Rates for those aged 5–14 years were highest for both sexes with male rates hovering between 8 to 10 high threat to life injuries per 100,000 population and female rates hovering between 1 to 2 high threat to life injuries. Females aged 45–64 years were the only group among either sex to record a significant change in rates over the 8-year period with an average annual increase of 10.9% (95% CI: 3.2%, 19.1%).

Age-specific rates for females were much lower than for males across all age groups. Rates for females were much lower than for males across all age groups. Rates on average across the 8-year period varied from four and a half times as high for males than females in the 45–64 year age group to almost twelve and a half times as high for males than females in those aged 15–24 years.

Type of activity

Of persons who sustained high threat to life injuries as a result of a non-traffic accident, 10% were known to have involved BMX cycling, while a further 7% involved mountain cycling (Table 3.14). Overall, almost 85% of those injured while involved in BMX cycling were aged 5–24 years (Table 3.15). A high proportion of cases coded to 'Other and unspecified activity' (55%) and 'Cycling, unspecified' (22%) made interpretation of the person's activity at the time the accident occurred difficult.

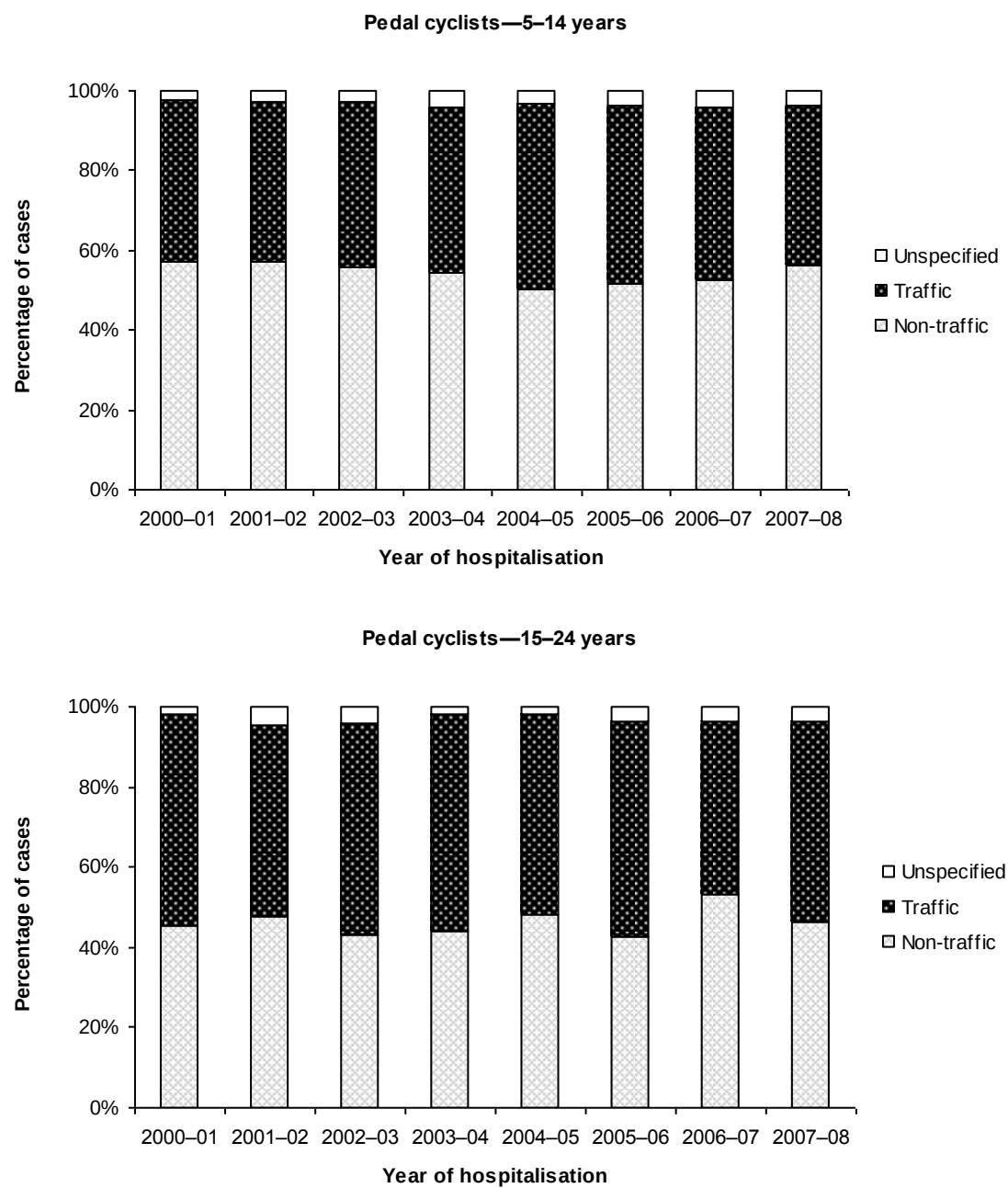


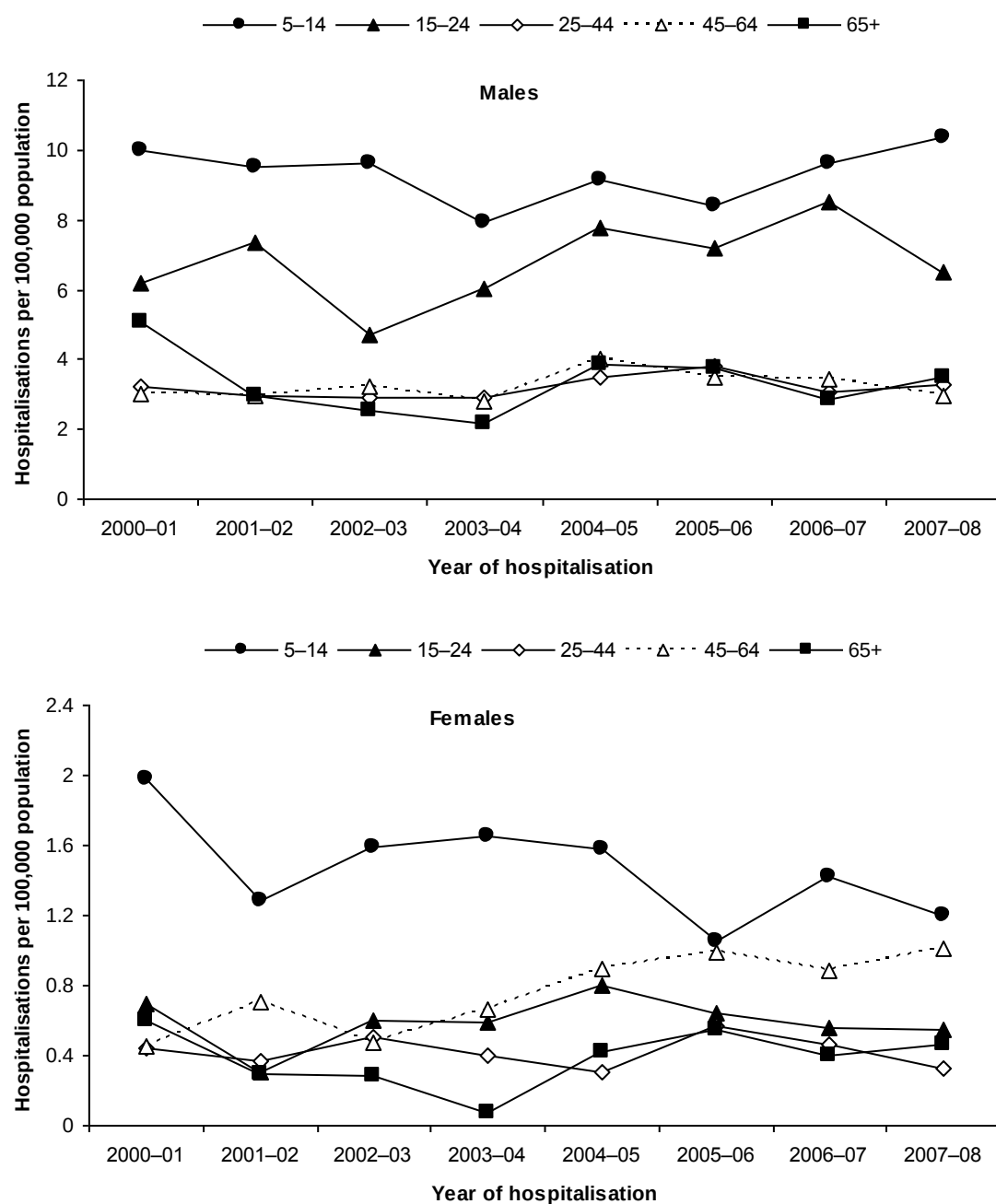
Figure 3.17: High threat to life injury of pedal cyclists due to transport accidents – percentages by traffic, non-traffic and unspecified as to whether traffic or non-traffic by age groups, Australia, 2000–01 to 2007–08

Table 3.13: Pedal cyclists seriously injured with high threat to life due to a non-traffic crash by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
5–14								
Males	138	132	134	111	128	118	135	146
Females	26	17	21	22	21	14	19	16
Persons	164	149	155	133	149	132	154	162
15–24								
Males	83	100	65	85	111	105	127	99
Females	9	..	8	8	11	9	8	8
Persons	92	..	73	93	122	114	135	107
25–44								
Males	93	86	85	85	103	113	91	99
Females	13	11	15	12	9	17	14	10
Persons	106	97	100	97	112	130	105	109
45–64								
Males	67	68	76	67	99	88	89	78
Females	10	16	11	16	22	25	23	27
Persons	77	84	87	83	121	113	112	105
65+								
Males	54	32	28	25	45	45	35	44
Females	8	..	..	..	6	8	6	7
Persons	62	..	..	..	51	53	41	51
All ages								
Males	439	423	393	378	489	476	480	471
Females	71	53	59	61	70	75	70	71
Persons	510	476	452	439	559	551	550	542

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

.. Small counts are omitted ($n < 5$). The omission of small counts also necessitated the omission of counts for persons.



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.10.

Figure 3.18: High threat to life injury rates per 100,000 population for pedal cyclists involved in a non-traffic accident by age and sex, Australia, 2000-01 to 2007-08

Table 3.14: Pedal cyclists seriously injured with high threat to life due to a non-traffic crash, Australia, 2002–03 to 2007–08

Activity	Year of hospitalisation					
	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Cycling—BMX	45	47	40	51	53	60
Cycling—Mountain	26	31	30	36	48	46
Cycling—Road	9	12	10	8	13	10
Cycling—Track and velodrome	10	..	10	7	8	14
Other specified cycling	5	..	13	16	13	12
Cycling, unspecified	97	107	137	100	119	135
Triathlon cycling event	..	..	..	..	..	..
While working for income, unspecified	..	..	..	8	..	..
Other and unspecified activity	258	234	317	323	291	263
Total	452	439	559	551	550	542

Note: Data for years 2000–01 and 2001–02 not shown since listed activities were not specified in ICD-10-AM editions for these years.

.. Small counts are omitted ($n < 5$).

Table 3.15: Pedal cyclists seriously injured with high threat to life due to a non-traffic crash, ages 5–24, Australia, 2002–03 to 2007–08

Activity	Year of hospitalisation					
	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Cycling—BMX	36	41	34	41	44	54
Cycling—Mountain	7	11	9	12	18	11
Cycling—Road	..	..	..	..	..	..
Cycling—Track and velodrome	..	..	..	..	..	..
Other specified cycling	..	..	6	7	7	9
Cycling, unspecified	55	55	66	40	59	61
Other and unspecified activity	127	116	152	145	157	129
Total	228	226	271	246	289	269

Note: Data for years 2000–01 and 2001–02 not shown since listed activities were not specified in ICD-10-AM editions for these years.

.. Small counts are omitted ($n < 5$).

3.4.5 Pedestrians

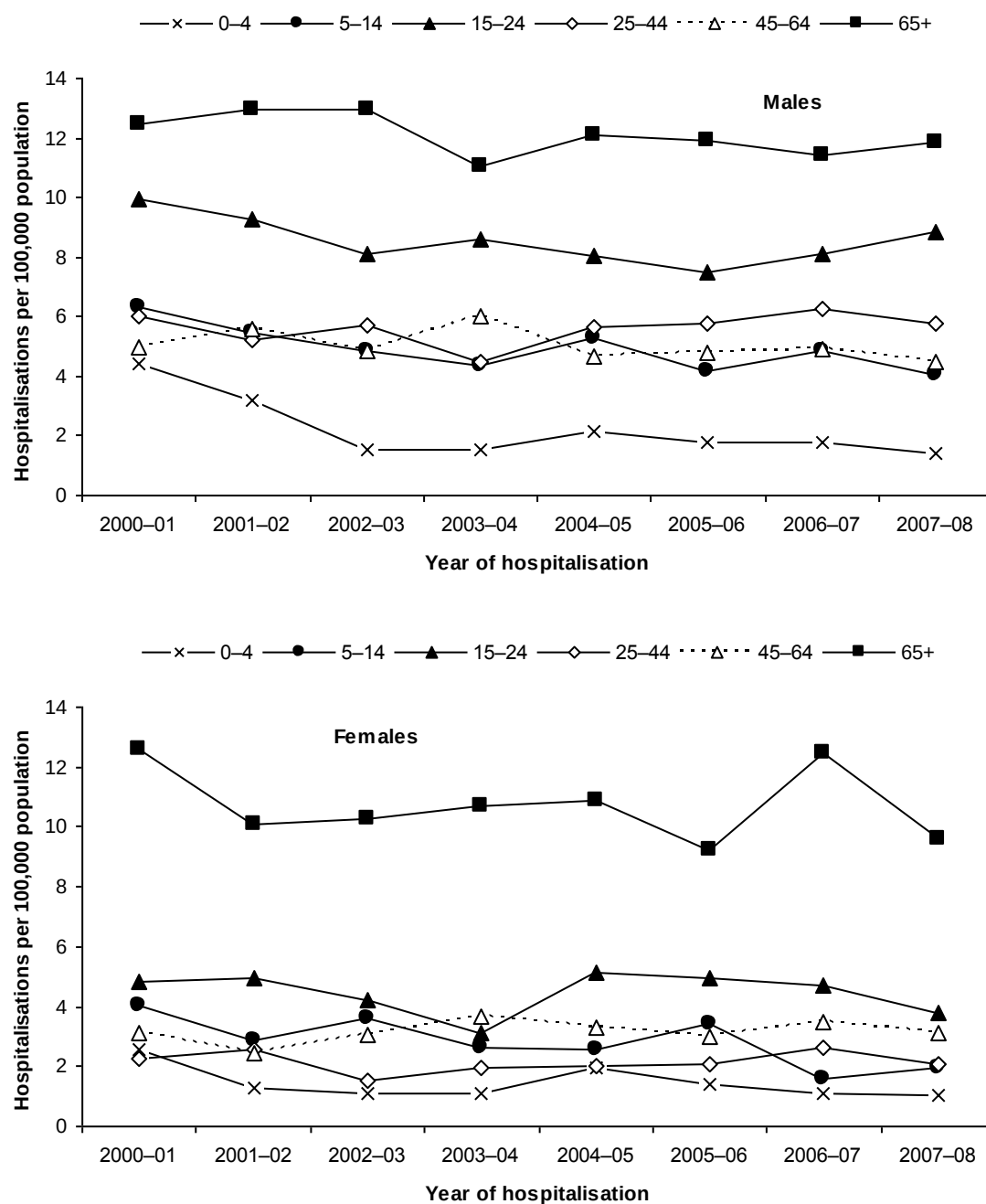
Males aged 25–44 years and 65 years and over experienced modest upward trends in the number of seriously injured with high threat to life as a result of being involved in a road vehicle traffic accident while a pedestrian on or adjacent to a public road over the 8-year period from 2000–01 to 2007–08 (Table 3.16). Males age 0–4 years and 5–14 years recorded a moderate downward trend in numbers of high threat to life injuries, while there was no discernible trend either up or down for males aged 15–24 years and 45–64 years over the 8-year period. For females there was moderate upward trend in the numbers high threat to life injuries for those aged 45–64 years and 65 years and over. For females aged 15–24 years, 25–44 years and 65 years and over, there was no discernible trend either up or down, while for females aged 0–4 years and 5–14 years, there was a moderate downward trend over the 8-year period.

Age-specific rates for those aged 65 years and over were highest for both males and females although the gap in rates between these age groups and the other age groups was more pronounced for females (Figure 3.19). There was no significant change in rates for the four oldest age groups for both males and females over the 8-year period. For males, those aged 0–4 years recorded the most significant fall in rates with an average annual rate of decrease of 13.5% (95% CI: 6.9%, 20.2%) while those aged 5–14 years recorded a significant, but more moderate fall in rates. For females, those aged 5–14 years recorded a significant fall in rates with an average annual rate of decrease of 8.8% (95% CI: 1.4%, 13.3%) while those aged 0–4 years recorded no significant change in rates over the period of interest.

Age-specific rates for females were lower than for males across all age groups, although rates for those aged 65 years and over were similar for both sexes. Rates on average for the remaining age groups across the 8-year period varied from one and a half times as high for males than females in the 0–4 year and 45–64 year age groups to almost three times as high for males than females in those aged 25–44 years.

Table 3.16: Pedestrians seriously injured with high threat to life due to a road traffic crash by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
0–4								
Males	29	21	10	10	14	12	12	10
Females	16	8	7	7	12	9	7	7
Persons	45	29	17	17	26	21	19	17
5–14								
Males	87	76	68	61	74	59	68	57
Females	53	38	48	35	34	46	21	26
Persons	140	114	116	96	108	105	89	83
15–24								
Males	133	126	112	121	115	109	121	135
Females	62	65	56	42	71	69	67	55
Persons	195	191	168	163	186	178	188	190
25–44								
Males	175	152	166	131	166	171	187	175
Females	83	93	59	73	76	77	97	79
Persons	258	245	225	204	242	248	284	254
45–64								
Males	111	128	113	145	115	121	127	119
Females	69	56	72	88	82	76	90	84
Persons	180	184	185	233	197	197	217	203
65+								
Males	132	141	144	126	141	143	141	150
Females	169	138	143	151	157	135	187	147
Persons	301	279	287	277	298	278	328	297
All ages								
Males	667	644	613	594	625	615	656	646
Females	452	398	385	396	432	412	469	398
Persons	1,119	1,042	998	990	1,057	1,027	1,125	1,044



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.11.

Figure 3.19: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for pedestrians by age and sex, Australia, 2000-01 to 2007-08

3.5 Heavy transport vehicles and buses

Over the 8-year period from 2000–01 to 2007–08, there were moderate upward trends in the numbers of persons seriously injured in a road traffic crash involving a heavy transport vehicle or bus in New South Wales, Queensland and Western Australia (Table 3.17). For the other jurisdictions, the number of seriously injured persons remained steady over the period of interest.

Table 3.17: All persons seriously injured with high threat to life in a road traffic crash involving a heavy transport vehicle or bus by state or territory of residence, Australia, 2000–01 to 2007–08

State or territory of residence	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW	161	156	137	167	183	179	195	188
Vic	130	109	136	121	140	131	126	134
Qld	81	81	92	92	122	105	115	113
WA	36	42	33	34	25	55	48	65
SA	55	50	44	38	35	51	47	46
Tas	9	10	14	13	13	15	18	10
ACT	7	7	..	6	..	..	..	8
NT	8	8	..	..	..	7	9	6
Total^(a)	497	469	473	483	542	565	571	577

(a) Includes cases for which state or territory of residence was not specified.

.. Small counts are omitted ($n < 5$).

Occupants of heavy transport vehicle

Over the 8-year period from 2000–01 to 2007–08, 51% of persons seriously injured with high threat to life while occupants of a heavy transport vehicle (excluding buses) were involved in non-collision transport accidents (Table 3.18). A further 16% of those injured were involved in collisions with other heavy transport vehicles while 15% were involved in collisions with fixed or stationary objects. The number of persons injured annually remained relatively constant over the period of interest for nearly all types of collision, although there was a modest jump halfway through the 8-year period in the number of persons injured due to non-collision transport accidents.

Table 3.18: Occupants of heavy transport vehicles (excluding buses) seriously injured with high threat to life in a road traffic crash by counterpart, Australia, 2000–01 to 2007–08

Counterpart	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Car, pick-up truck or van	19	8	11	12	9	15	11	23
Heavy transport vehicle	17	18	16	15	26	33	31	23
Pedestrian or animal	..	..	..	..	..	..	..	..
Train	..	..	..	..	..	..	..	..
Fixed or stationary object	12	22	28	25	22	21	18	18
Non-collision Transport accident ^(a)	65	52	67	63	81	70	83	89
Other and unspecified accidents	12	8	..	5	12	10	11	10
Total	129	112	128	122	151	150	161	165

(a) Non-collision transport accidents include overturning, falling or being thrown from a motor vehicle. These accidents are included if the accident leading to injury originated or terminated on a public road.

.. Small counts are omitted ($n < 5$).

Bus occupants

Over the 8-year period from 2000–01 to 2007–08, 46% of persons seriously injured with high threat to life while occupants of a bus were involved in non-collision transport accident (Table 3.19). A further 20% of those seriously injured were involved in a collision with a car, pick-up truck or van. The number of persons seriously injured annually remained relatively constant over the period of interest for nearly all types of collision, although there was a modest jump halfway through the 8-year period in the number of persons injured due to non-collision transport accidents.

Table 3.19: Bus occupants seriously injured with high threat to life in a road traffic crash by counterpart, Australia, 2000–01 to 2007–08

Counterpart	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Car, pick-up truck or van	..	6	9	6	15	22	19	6
Heavy transport vehicle	..	0	..	..	..	7	..	..
Pedestrian or animal	0	0	0	..	0	..	..	..
Fixed or stationary object	..	16	..	5	..	..	7	7
Non-collision Transport accident ^(a)	23	15	14	16	24	31	39	35
Other and unspecified accidents	8	7	8	7	16	6	7	14
Total	37	44	35	36	60	69	77	70

(a) Non-collision transport accidents include overturning, falling or being thrown from a motor vehicle. These accidents are included if the accident leading to injury originated or terminated on a public road.

.. Small counts are omitted ($n < 5$).

Persons other than occupants of a heavy transport vehicle or bus

Over the 8-year period from 2000–01 to 2007–08, almost 67% of persons seriously injured with high threat to life after being involved in an on-road collision with a heavy transport vehicle or bus were occupants of a car (Table 3.20). A further 14% were pedestrians while almost 11% were motorcyclists. The number of persons seriously injured annually remained relatively constant over the period of interest regardless of the injured person's vehicle.

Table 3.20: Persons (other than occupants of a heavy transport vehicle or bus) seriously injured with high threat to life in a collision with a heavy transport vehicle or bus by injured person's vehicle, Australia, 2000–01 to 2007–08

Injured person's vehicle	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Car	239	205	204	217	220	226	214	230
Motorcycle	27	27	44	35	33	35	39	37
Pedal cycle	17	17	16	13	21	22	17	20
Pedestrian	40	54	36	47	50	53	50	45
Pick-up truck or van	7	9	10	13	7	9	12	10
Total^(a)	331	313	310	325	331	346	333	342

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

.. Small counts are omitted ($n < 5$).

4 Trends in high threat to life injury due to land transport accidents not specified as traffic accidents, 2000–01 to 2007–08

This chapter reports on high threat to life injuries which resulted from either a non-traffic (off-road) accident or where the location of the accident is not specified. A non-traffic accident is defined as any vehicle accident that occurs entirely in any place other than a public highway. Chapter 3 also includes brief sections on non-traffic accidents related to motor cycles and pedal cycles.

4.1 Overview

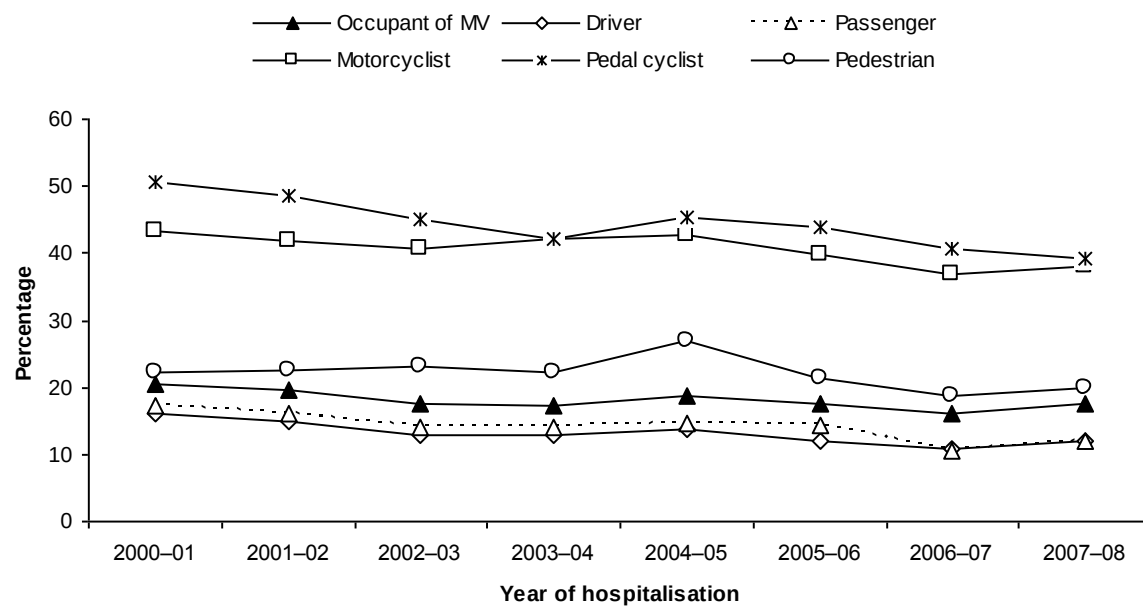
Of all road user groups, only motorcyclists and pedal cyclists experienced a noticeable upward trend in the number of persons seriously injured with high threat to life due to land transport accidents not specified as traffic accidents over the 8-year period from 2000–01 to 2007–08 (Table 4.1). For all other road user groups, there were moderate downward trends in the number of persons seriously injured over the 8-year period.

For all road user groups there were modest declines over the 8-year period for cases not specified as a traffic accident as a percentage of all land transport accidents (Figure 4.1). The most noticeable decreases were seen for both drivers and passengers of motor vehicles as well as for pedal cyclists.

Table 4.1: Persons seriously injured with high threat to life due to non-traffic and unspecified as to whether traffic or non-traffic by road user group, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Occupant of MV ^(a)	1,209	1,210	994	1,020	1,163	1,107	1,024	1,096
<i>Driver</i>	539	518	412	450	502	445	400	449
<i>Passenger</i>	336	322	256	254	279	294	206	222
Motorcyclist	857	869	812	941	1,073	1,069	1,091	1,174
Pedal cyclist	539	514	483	479	601	607	593	590
Pedestrian	319	302	300	285	391	277	257	259
Other or unknown	674	637	657	653	702	733	724	652
Total	3,598	3,532	3,246	3,378	3,930	3,793	3,689	3,771

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



Notes

1. Occupant of a motor vehicle includes cases where it was not stated whether person was a driver or a passenger.
2. Table corresponding to this figure can be found in Appendix 1, Table A1.12.

Figure 4.1: Persons seriously injured with high threat to life due to non-traffic crashes and crashes unspecified as to traffic or non-traffic as a percentage of persons seriously injured with high threat to life in all land transport crashes by road user type, Australia, 2000-01 to 2007-08

4.2 Non-traffic

Overview

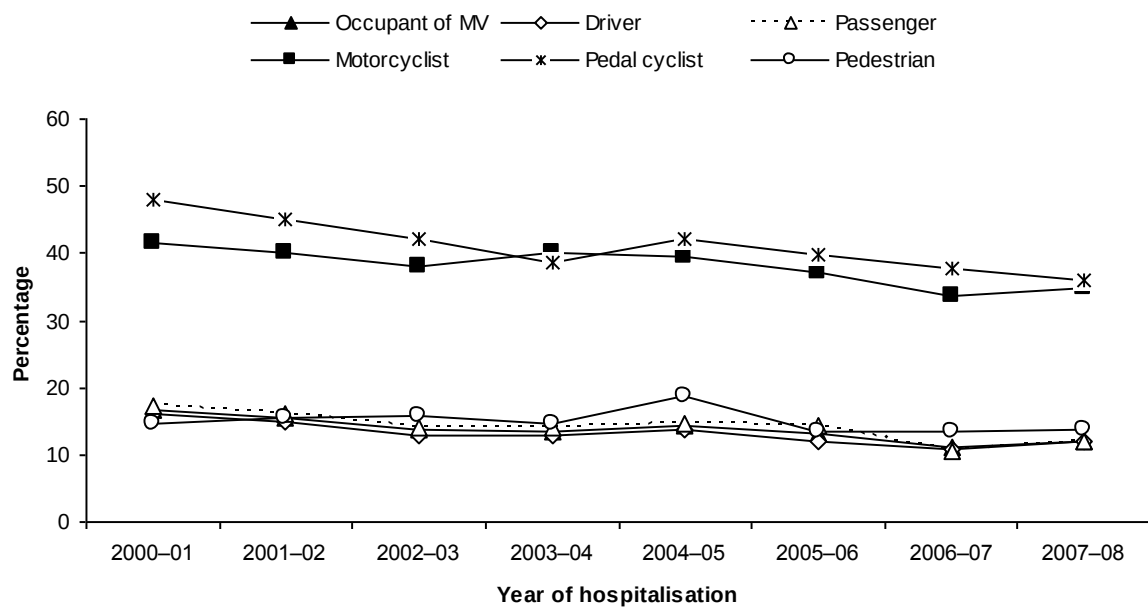
Motorcyclists and pedal cyclists experienced a noticeable upward trend in the number of persons seriously injured with high threat to life as a result of a non-traffic crash and transport accident over the 8-year period from 2000–01 to 2007–08 (Table 4.2). For all other road user groups, there were downward trends in the number of persons injured over the 8-year period.

For all road user groups there were modest declines over the 8-year period for cases specified as a non-traffic accident as a percentage of all land transport accidents (Figure 4.2). The most noticeable decreases were seen for both drivers and passengers of motor vehicles as well as for pedal cyclists. Motor cyclists and pedal cyclists had easily the highest percentages reflecting the fact that these transport types are more likely to be used off-road than other types of transport.

Table 4.2: Persons seriously injured with high threat to life due to non-traffic crashes by road user group, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Occupant of MV ^(a)	986	957	772	799	895	831	706	761
<i>Driver</i>	539	518	412	450	502	445	400	449
<i>Passenger</i>	336	322	256	254	279	294	206	222
Motorcyclist	818	838	762	895	995	998	998	1,080
Pedal cyclist	510	476	452	439	559	551	550	542
Pedestrian	209	207	204	187	270	175	185	179
Other or unknown	25	27	25	19	11	25	20	13
Total	2,548	2,505	2,215	2,339	2,730	2,580	2,459	2,575

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

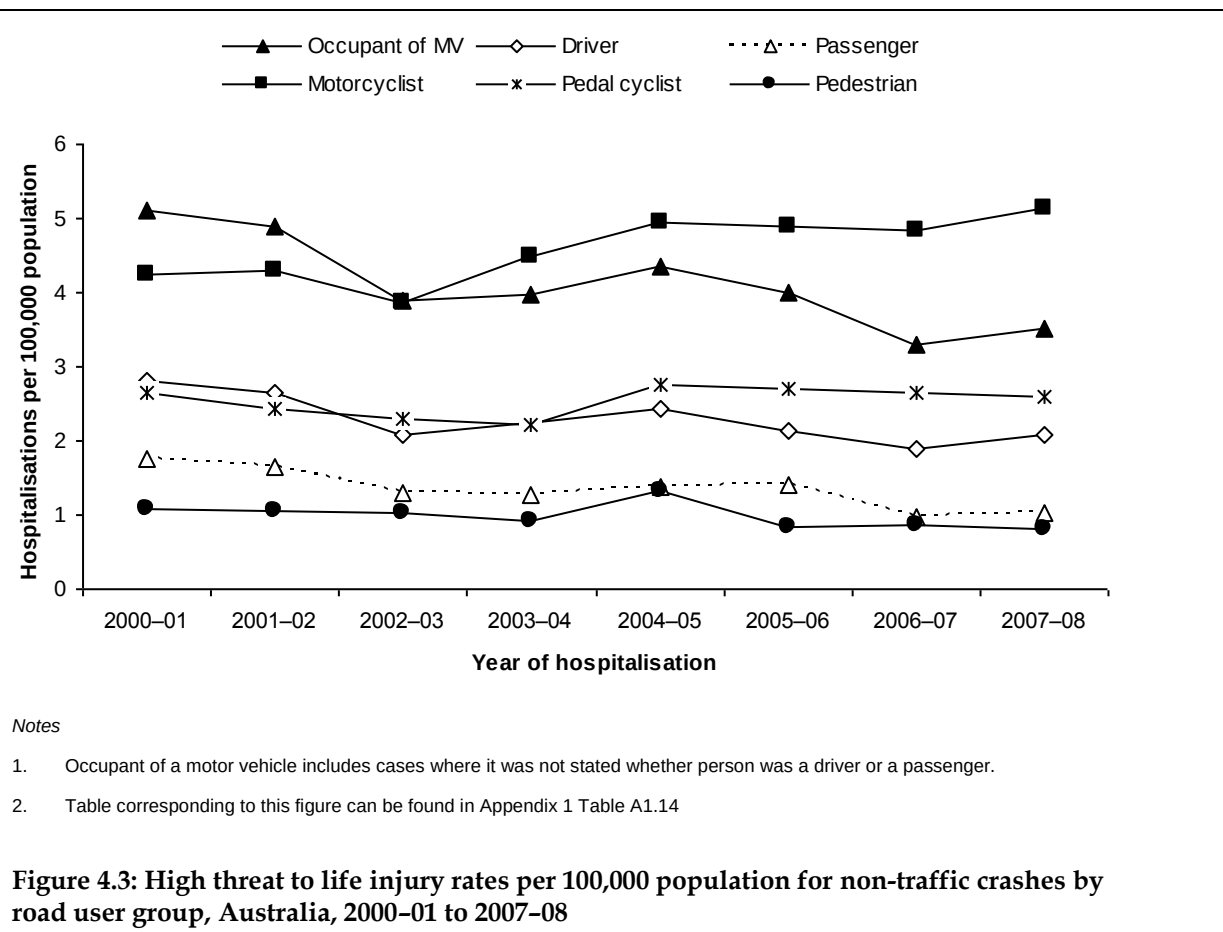


Notes

1. Occupant of a motor vehicle includes cases where it was not stated whether person was a driver or a passenger.
2. Table corresponding to this figure can be found in Appendix 1, Table A1.13.

Figure 4.2: Persons seriously injured with high threat to life due to non-traffic crash as a percentage of persons seriously injured in all land transport crashes by road user type, Australia, 2000-01 to 2007-08

Over the 8-year period from 2000–01 to 2007–08, only motorcyclists experienced a significant increase in age-standardised rates of persons seriously injured in non-traffic crashes with an average annual increase of 3.3% (95% CI: 2.3%, 4.4%) (Figure 4.3). All other road user groups, apart from pedal cyclists for which no significant change in rates was recorded, experienced a significant decline in rates over the 8-year period, with the largest of these being for passengers of motor vehicles who recorded an average annual decrease of 6.7% (95% CI: 5.0%, 8.4%).



State and territory of residence

Trends in counts and age-standardised serious injury rates for non-traffic crashes over the 8-year period from 2000–01 to 2007–08 for those with life-threatening injuries by state or territory of residence and road user group are presented on Table 4.3 and Figures 4.4–4.6. For drivers of motor vehicles observations indicated that:

- Victoria and Queensland recorded moderate downward trends in the number of persons injured. Both jurisdictions experienced significant decreases in age-standardised rates, with Queensland recording the higher average annual rate of decrease of 8.0% (95% CI: 5.3%, 10.6%) (Figure 4.4).
- There were no discernible trends either up or down in numbers or rates for any of the other jurisdictions, although small case numbers for the Australian Capital Territory and the Northern Territory made any determination of trends difficult.

Observations related to passengers of motor vehicles were that:

- New South Wales, Queensland, Western Australia and South Australia recorded moderate downward trends in the number of persons seriously injured. All four of these jurisdictions experienced significant decreases in age-standardised rates, with Queensland recording the highest annual rate of increase of 9.8% (95% CI: 4.2%, 15.0%) (Figure 4.4).
- There were no discernible trends either up or down in numbers or rates for any of the other jurisdictions, although small case numbers for Tasmania, the Australian Capital Territory and the Northern Territory made any determination of trends difficult.

Key observations when looking at motorcyclists included:

- All jurisdictions except the Australian Capital Territory, recorded moderate upward trends in the number of persons seriously injured.
- New South Wales, Victoria, Queensland, South Australia and Tasmania experienced significant increases in rates, with Tasmania recording the highest annual rate of increase of 11.8% (95% CI: 4.4%, 19.7%) (Figure 4.5).
- Rates for all other jurisdictions did not vary significantly.

When looking at pedal cyclists it was observed that:

- All jurisdictions except Western Australia and the Northern Territory, recorded slight to moderate upward trends in the number of persons seriously injured.
- There was a moderate downward trend in numbers for Western Australia while small case numbers for the Northern Territory made interpretation of trends difficult.
- Victoria was the only jurisdiction to record a significant increase in rates with an annual rate of increase of 2.9% (95% CI: 0.3%, 5.7%) (Figure 4.5), while Western Australia was the only jurisdiction to record a significant decrease in rates with an average annual rate of decrease of 5.3% (95% CI: 1.2%, 9.2%).

Finally, when looking at pedestrians, key observations indicated that:

- Queensland and Western Australia, recorded moderate downward trends in the number of persons seriously injured.
- There were no discernible trends either up or down in numbers or rates for any of the other jurisdictions, although small case numbers for Tasmania, the Australian Capital Territory and the Northern Territory made any determination of trends difficult.
- Both Queensland and Western Australia experienced significant decreases in rates, with Queensland recording the higher annual rate of decrease of 10.1 % (95% CI: 5.6%, 14.3%) (Figure 4.6).

Table 4.3: Persons seriously injured with high threat to life due to non-traffic crashes by state and territory of residence, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW								
Occupant of MV ^(a)	268	255	220	259	317	265	201	232
<i>Driver</i>	136	123	117	129	182	153	111	130
<i>Passenger</i>	94	104	70	90	97	84	53	71
Motorcyclist	254	237	207	286	326	319	302	309
Pedal cyclist	152	128	127	131	177	161	159	152
Pedestrian	62	53	58	59	104	50	74	57
Other or unknown	5	6	10	5	..	9	7	5
Vic								
Occupant of MV ^(a)	212	215	163	140	165	171	156	161
<i>Driver</i>	133	114	89	88	87	84	89	89
<i>Passenger</i>	61	70	49	38	54	67	53	52
Motorcyclist	171	192	176	177	192	224	210	233
Pedal cyclist	122	125	112	110	128	147	159	146
Pedestrian	41	56	40	47	52	37	44	44
Other or unknown	8	..	..	7	..	..	..	..
Qld								
Occupant of MV ^(a)	251	254	191	205	212	162	164	178
<i>Driver</i>	132	144	103	119	115	86	83	107
<i>Passenger</i>	87	75	65	60	61	61	52	52
Motorcyclist	216	195	190	221	241	236	252	279
Pedal cyclist	112	100	112	83	119	112	109	121
Pedestrian	53	50	48	32	39	43	25	33
Other or unknown	7	11	6	..	..	11	6	0
WA								
Occupant of MV ^(a)	100	101	66	69	69	80	75	82
<i>Driver</i>	61	58	30	38	44	44	47	53
<i>Passenger</i>	37	36	27	25	19	26	17	22
Motorcyclist	85	98	87	88	83	90	100	110
Pedal cyclist	66	51	44	47	63	51	42	41
Pedestrian	21	25	25	21	23	13	15	13
Other or unknown	..	..	..	..	..	..	0	..
SA								
Occupant of MV ^(a)	81	75	78	76	64	82	65	49
<i>Driver</i>	43	47	41	49	35	44	45	29
<i>Passenger</i>	30	18	29	21	26	26	14	13
Motorcyclist	51	62	62	80	91	76	82	81
Pedal cyclist	28	41	37	39	34	45	47	40
Pedestrian	22	17	19	16	35	20	14	19
Other or unknown	..	..	..	..	..	..	..	..

(continued)

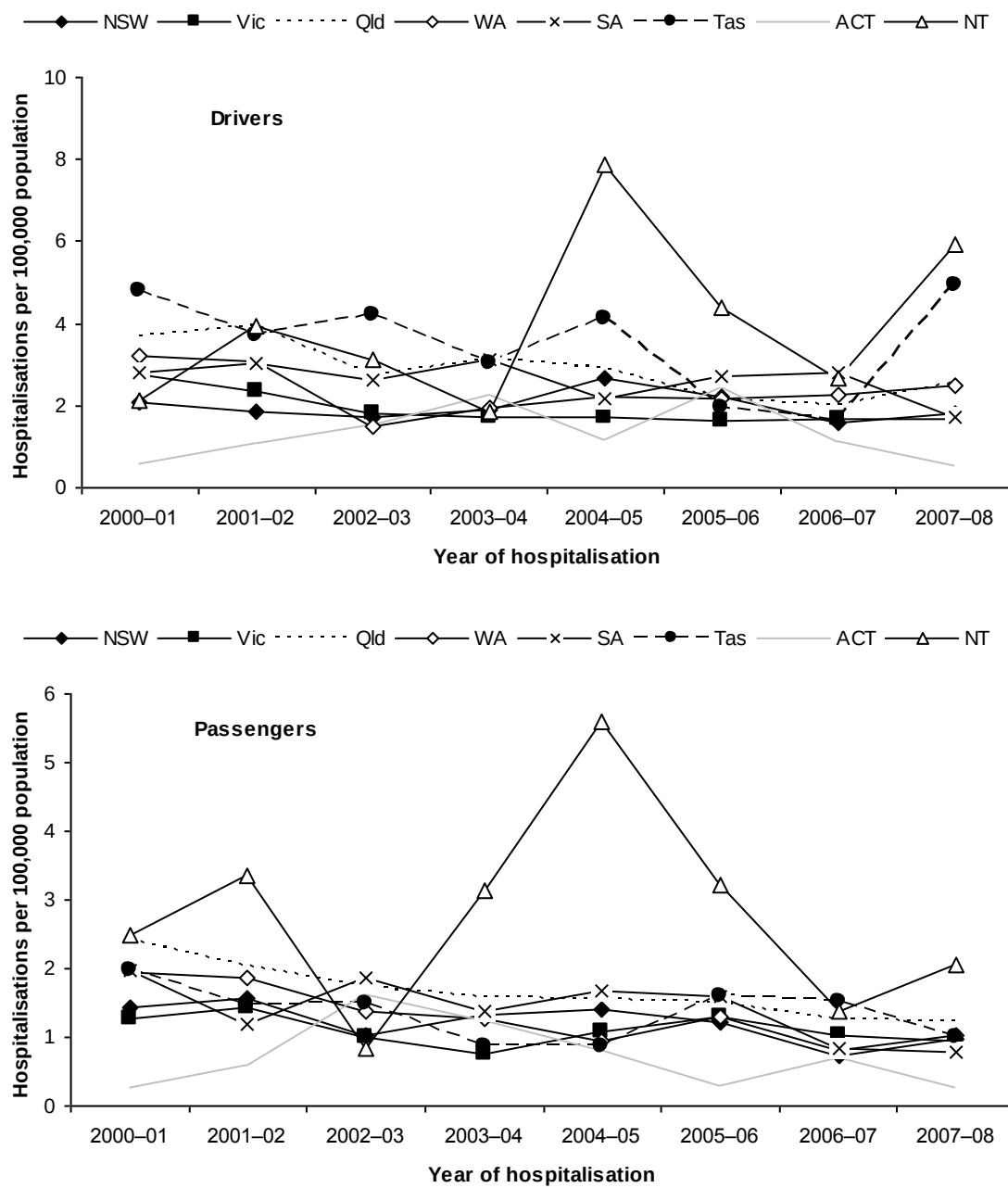
Table 4.3 (continued): Persons seriously injured with high threat to life due to non-traffic crashes by state and territory of residence, Australia, 2000-01 to 2007-08

Road user type	Year of hospitalisation							
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Tas								
Occupant of MV ^(a)	36	28	30	19	24	19	17	31
<i>Driver</i>	22	18	19	14	20	9	8	23
<i>Passenger</i>	9	7	7	..	..	8	7	5
Motorcyclist	13	19	16	17	22	20	22	34
Pedal cyclist	13	11	6	8	21	13	13	15
Pedestrian	7	..	..	5	8	5	..	6
Other or unknown	0	0	0	0	0	..	0	0
ACT								
Occupant of MV ^(a)	..	7	8	12	9	10	6	..
<i>Driver</i>	..	..	..	7	..	8	..	..
<i>Passenger</i>	..	..	..	..	..	..	..	..
Motorcyclist	6	16	11	15	13	9	..	12
Pedal cyclist	11	12	7	12	10	9	11	18
Pedestrian	0	..	..	..	..	..	..	..
Other or unknown	0	..	0	0	0	0	0	0
NT								
Occupant of MV ^(a)	13	17	9	11	22	19	9	20
<i>Driver</i>	..	9	7	..4	10	10	6	14
<i>Passenger</i>	6	7	..	7	10	7	..	5
Motorcyclist	16	11	10	8	17	19	17	16
Pedal cyclist	..	5	..	7	..	..	6	6
Pedestrian	..	..	..	..	..	0	..	..
Other or unknown	..	..	..	..	0	0	..	0
Australia^(b)								
Occupant of MV ^(a)	986	957	772	799	895	831	706	761
<i>Driver</i>	539	518	412	450	502	445	400	449
<i>Passenger</i>	336	322	256	254	279	294	206	222
Motorcyclist	818	838	762	895	995	998	998	1080
Pedal cyclist	510	476	452	439	559	551	550	542
Pedestrian	209	207	204	187	270	175	185	179
Other or unknown	25	27	25	19	11	25	20	13

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

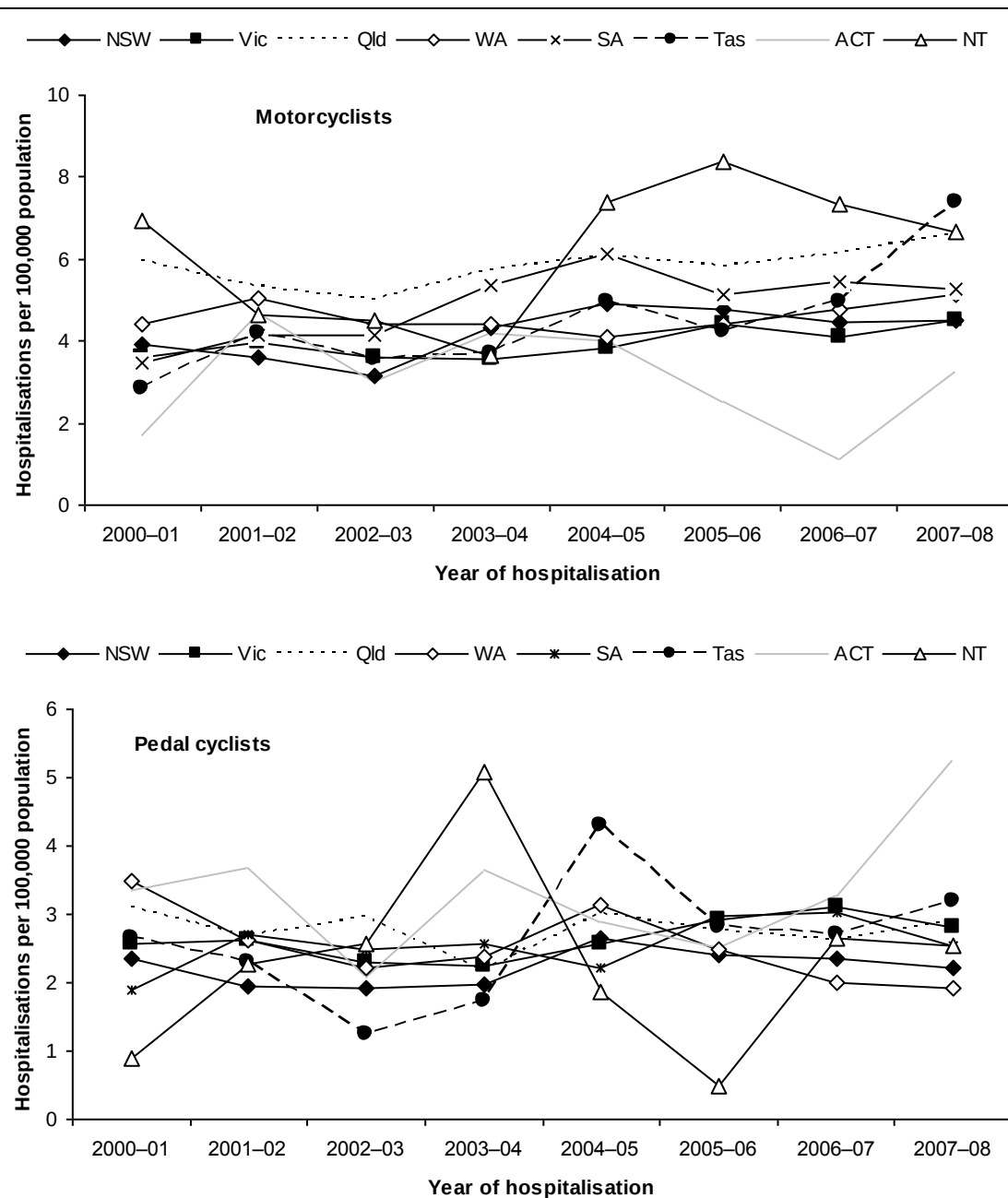
(b) Includes cases for other territories such as Cocos (Keeling) Islands, Norfolk Island and Christmas Island and cases where state and territory of residence is not specified

.. Small counts are omitted ($n < 5$).



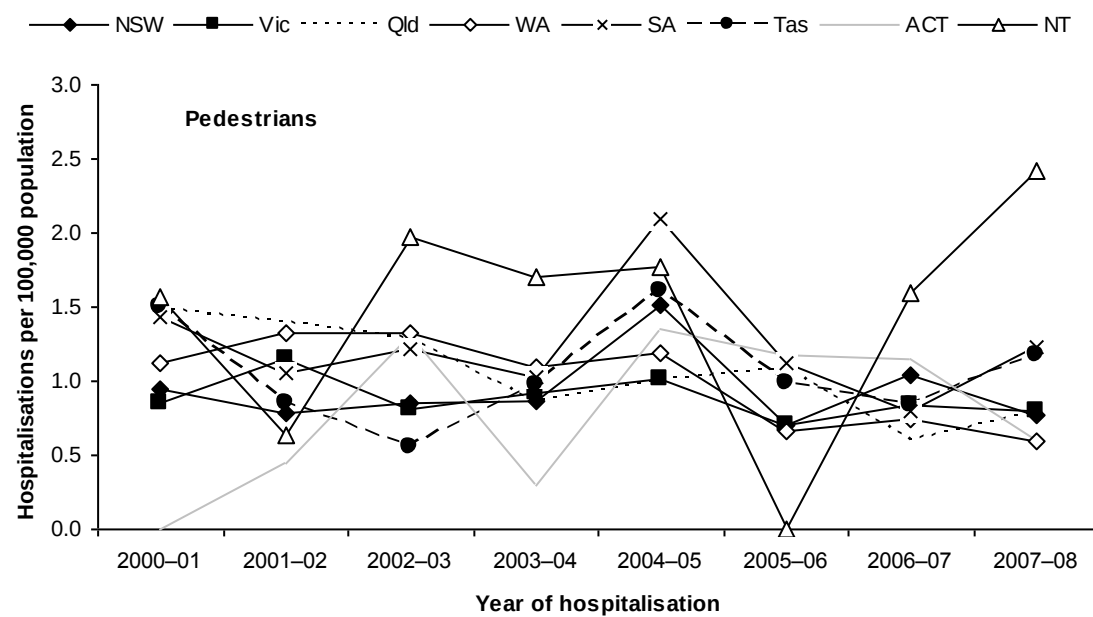
Note: Table corresponding to this figure can be found in Appendix 1, Table A1.15.

Figure 4.4: High threat to life injury rates per 100,000 population for drivers and passengers of motor vehicles involved in non-traffic accidents by state and territory of residence, Australia, 2000-01 to 2007-08



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.15.

Figure 4.5: High threat to life injury rates per 100,000 population for motorcyclists and pedal cyclists involved in non-traffic accidents by state and territory of residence, Australia, 2000-01 to 2007-08



Note: Table corresponding to this figure can be found in Appendix 1, Table A1.15.

Figure 4.6: High threat to life injury rates per 100,000 population for pedestrians involved in non-traffic accidents by state and territory of residence, Australia, 2000-01 to 2007-08

Remoteness of residence

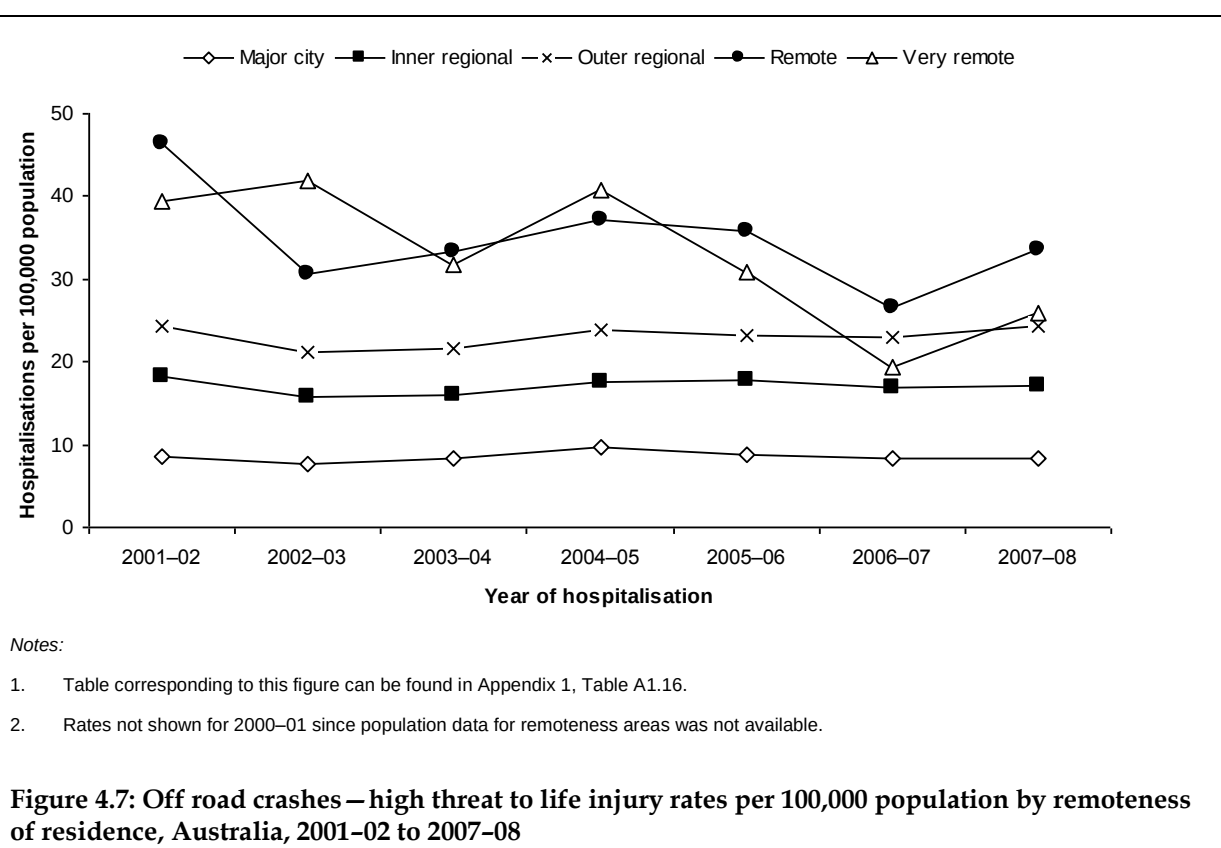
For those residing in Major city and Inner regional remoteness zones, there were slight upward trends in the number of persons seriously injured in non-traffic accidents over the 8-year period from 2000–01 to 2007–08 (Table 4.4). Those residing in Remote and Very remote zones recorded moderate downward trends while there was no discernible trend either up or down in numbers for those residing in the Outer regional zone.

Residents of Remote and Very remote zones experienced significant decreases in age-standardised rates over the 8-year period, with those residing in Very remote zones recording the higher annual rate of decrease of 7.8% (95% CI: 3.0%, 12.2%) (Figure 4.7). Rates for all other remoteness zones did not vary significantly.

Table 4.4: Persons seriously injured with high threat to life due to non-traffic crashes by remoteness of residence, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Major city	1,118	1,153	1,041	1,145	1,369	1,231	1,196	1,221
Inner regional	716	683	595	615	694	703	687	707
Outer regional	490	445	390	404	447	441	435	477
Remote	120	141	94	99	113	108	78	105
Very remote	67	63	72	56	67	53	34	46
Remoteness not reported	..	20	23	20	40	44	29	19
Total	2,514	2,505	2,215	2,339	2,730	2,580	2,459	2,575

.. Small counts are omitted ($n < 5$).



Road user groups by state and territory of residence

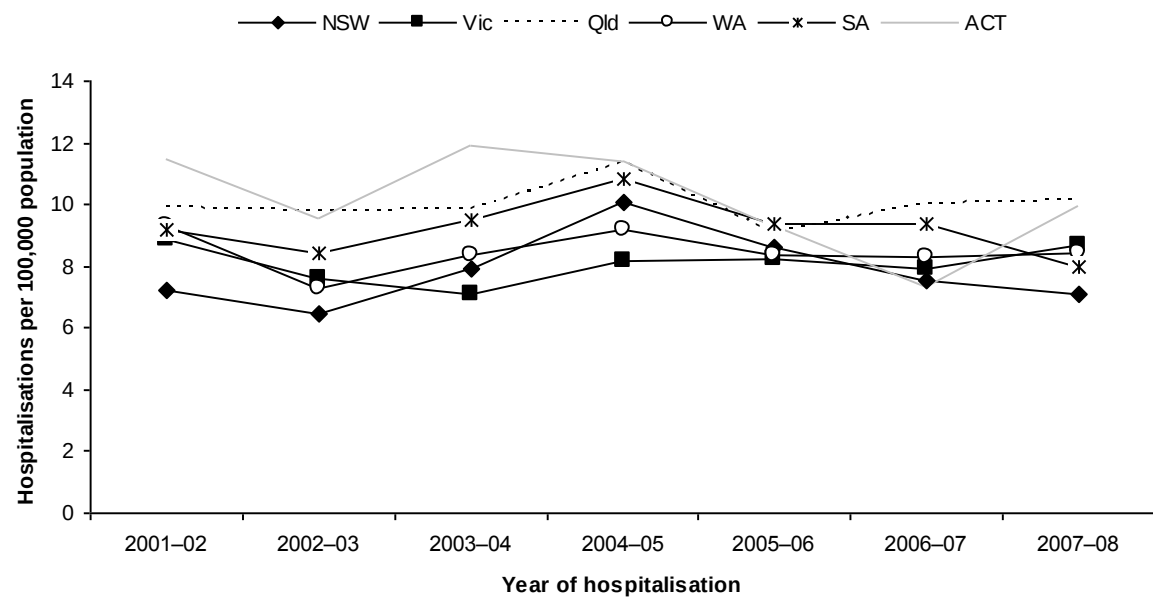
Trends in counts for non-traffic crashes for those with life-threatening injuries by state or territory of residence and remoteness area over the 8-year period from 2000–01 to 2007–08 are presented in Table 4.5. Trends in age-standardised serious injury rates for those residing in the Major city zone are presented in Figure 4.8. Major observations indicated that:

- Those residing in the Major City zone, recorded slight upward trends for all jurisdictions in the number of persons seriously injured with the most discernible upward trend being observed for Queensland residents (Table 4.5). Rates for persons seriously injured did not vary significantly for any of the jurisdictions (Figure 4.8).
- Except for Western Australia, which recorded a moderate downward trend, those residing in the Inner regional remoteness zone recorded modest upward trends in the number of persons seriously injured.
- New South Wales, South Australia and the Northern Territory recorded modest upward trends in the number of persons seriously injured for those residing in the Outer regional zone. Residents in Victoria and Queensland recorded moderate downward trends while there were no discernible trends either up or down for Western Australia and Tasmania.
- Those residing in Remote zones in New South Wales, Queensland, Western Australia and South Australia recorded moderate downward trends in the number of persons seriously injured. Residents in the Northern Territory recorded a moderate upward trend while small case numbers in Victoria and Tasmania did not allow for any meaningful trend analysis.
- Queensland, Western Australia, South Australia and the Northern Territory recorded moderate downward trends in the number of persons seriously injured for those residing in the Very remote zone. Small case numbers in New South Wales and Tasmania did not allow for any meaningful trend analysis.

Table 4.5: Persons seriously injured with high threat to life due to non-traffic crashes by state and territory of residence by remoteness of residence, Australia, 2000–01 to 2007–08

Remoteness area	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW								
Major city	372	347	313	389	496	428	381	360
Inner regional	229	205	185	224	269	236	238	250
Outer regional	112	105	104	110	148	121	106	131
Remote	22	14	16	15	8	15	15	10
Very remote	6	6	..	0	..	..	..	0
Vic								
Major city	319	321	280	264	308	317	308	344
Inner regional	166	205	158	154	170	196	206	185
Outer regional	67	61	51	61	48	67	56	58
Remote	..	..	..	..	..	0	..	..
Qld								
Major city	192	216	219	226	271	219	248	258
Inner regional	202	161	161	146	151	171	141	162
Outer regional	177	152	105	112	124	119	135	132
Remote	35	57	23	34	36	34	19	33
Very remote	33	24	39	24	31	21	13	26
WA								
Major city	130	129	103	118	133	123	126	131
Inner regional	48	43	33	27	27	25	29	26
Outer regional	47	47	42	32	41	46	44	48
Remote	38	43	29	31	27	33	22	30
Very remote	11	17	17	18	13	8	10	12
SA								
Major city	84	103	96	108	125	112	108	93
Inner regional	38	38	35	38	33	44	45	38
Outer regional	35	39	45	56	44	47	47	49
Remote	15	13	15	9	16	13	8	10
Very remote	11	..	7	..	7	9	..	..
Tas								
Inner regional	33	31	23	26	44	31	28	46
Outer regional	32	30	31	21	29	23	23	40
Remote	..	0	0	0	..	..	..	0
Very remote	..	..	..	..	..	..	..	0
ACT								
Major city	21	37	30	40	36	32	25	35
Inner regional	0	0	0	0	0	0	0	0
NT								
Outer regional	20	11	12	12	13	18	24	19
Remote	5	12	9	9	21	11	9	21
Very remote	5	12	6	10	13	10	..	6

.. Small counts are omitted ($n < 5$).



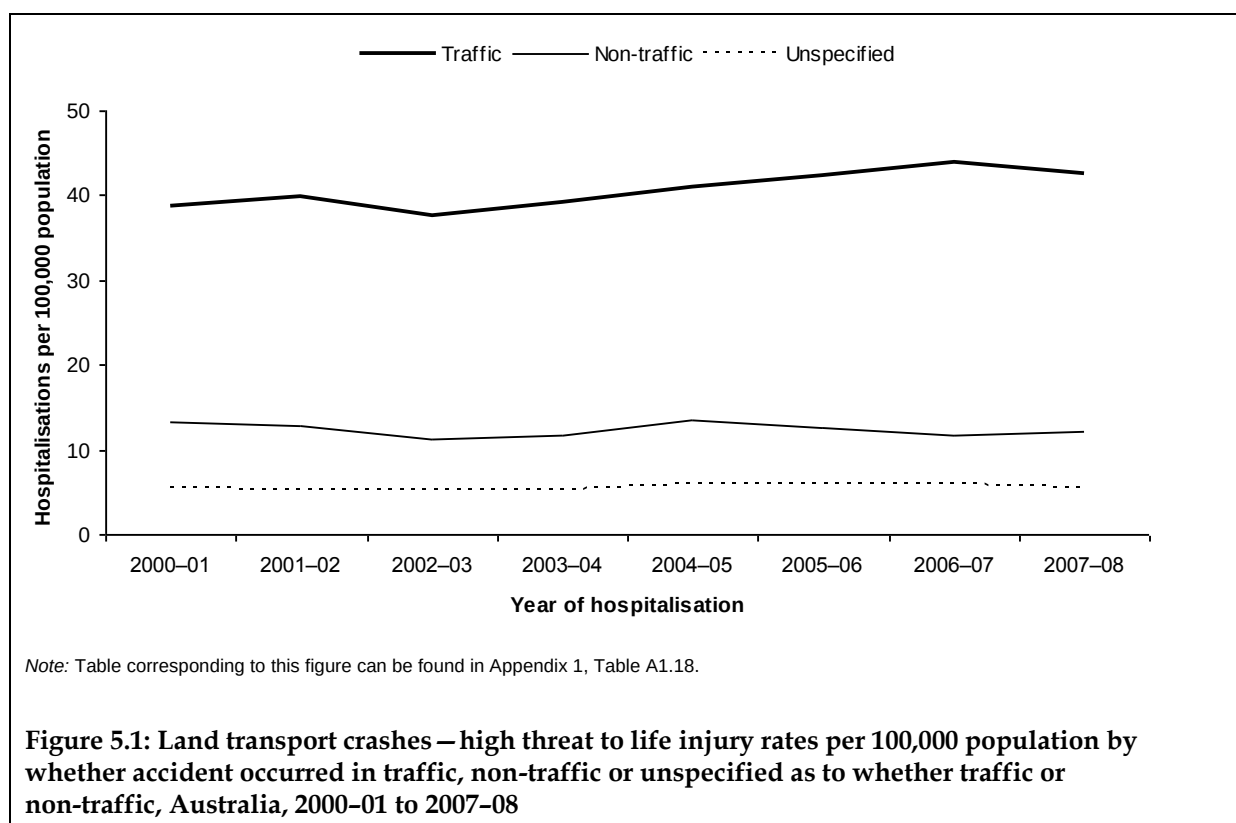
Notes

1. Table corresponding to this figure can be found in Appendix 1, Table A1.17.
2. Rates not shown for 2000-01 since population data for remoteness areas was not available.

Figure 4.8: Non-traffic crashes – high threat to life injury rates per 100,000 population for residents of major cities by state or territory of residence, Australia, 2001-02 to 2007-08

5 Trends in high threat to life injury when comparing traffic and non-traffic accidents, 2000–01 to 2007–08

Age-standardised rates for persons seriously injured with high threat to life after being involved in a traffic accident were consistently three to four times as high as rates for persons seriously injured after being involved in a non-traffic accident over the 8-year period from 2000–01 to 2007–08 (Figure 5.1). Rates for persons injured after being involved in a traffic accident increased significantly over the period of interest by an annual average of 1.9% (95% CI: 1.6%, 2.2%) while rates for persons injured after being involved in a non-traffic accident decreased significantly by an annual average of 0.7% (95% CI: 0.1%, 1.3%).

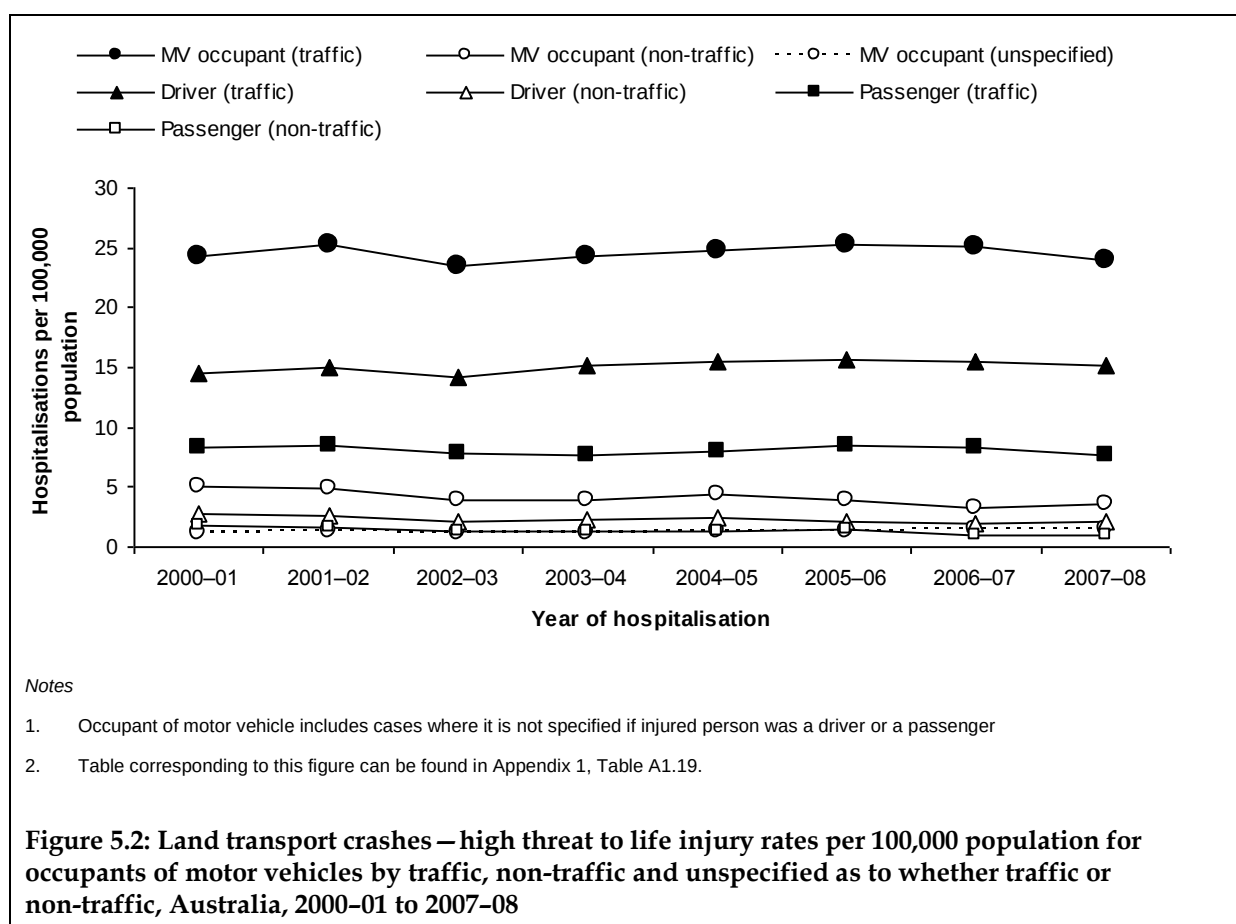


Age-standardised rates for occupants of a motor vehicle seriously injured with high threat to life after being involved in a traffic accident did not change significantly over the 8-year period from 2000–01 to 2007–08 while rates for occupants of a motor vehicle injured after being involved in a non-traffic accident decreased significantly by an average annual decrease of 5.1% (95% CI: 4.1%, 6.1%) (Figure 5.2).

Rates for drivers of a motor vehicle seriously injured with high threat to life after being involved in a traffic accident increased significantly over the period of interest by an average annual increase of 1.0% (95% CI: 0.5%, 1.6%) over 8-year period while rates for drivers of a

motor vehicle injured after being involved in a non-traffic accident decreased significantly by an average annual decrease of 4.3% (95% CI: 2.9%, 5.6%) (Figure 5.2).

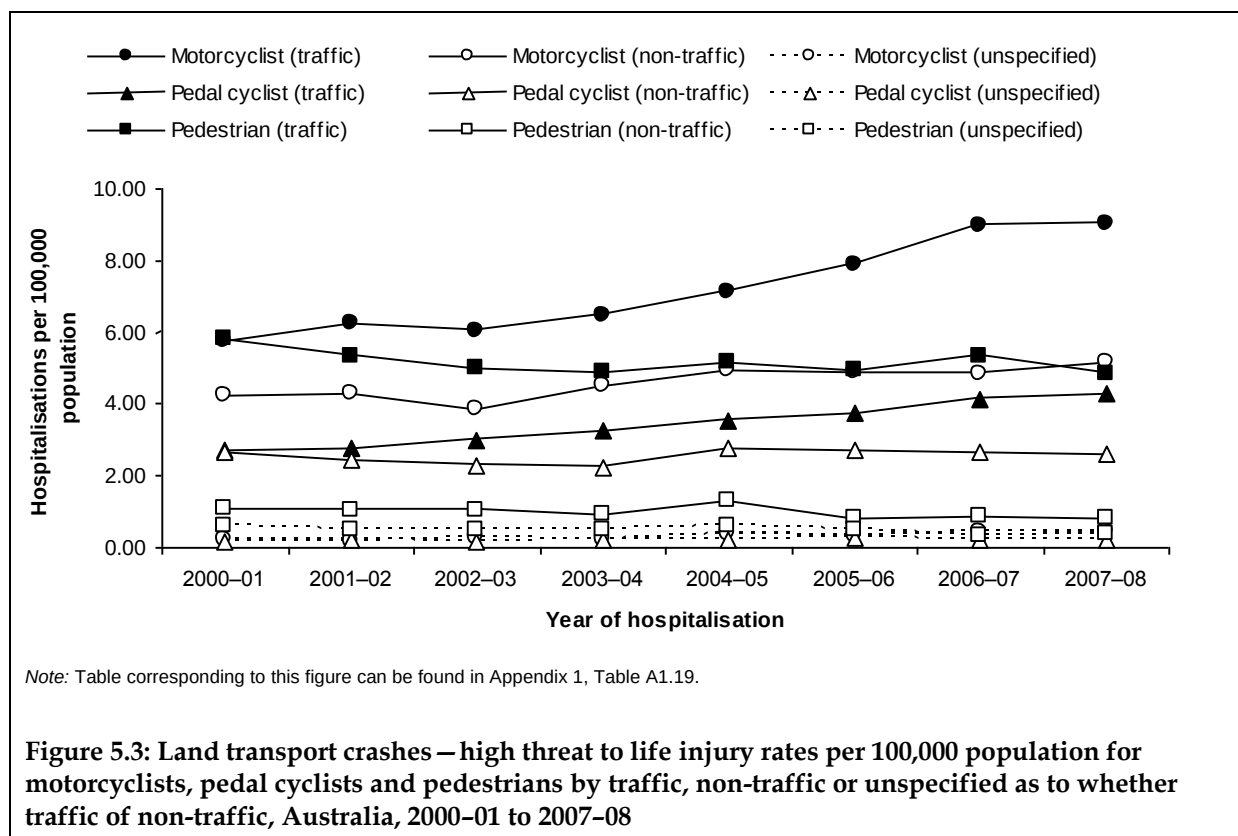
Rates for passengers of a motor vehicle seriously injured with thigh threat to life after being involved in a traffic accident did not change significantly over the period of interest while rates for passengers of a motor vehicle injured after being involved in a non-traffic accident decreased significantly by an average annual decrease of 6.7% (95% CI: 5.0%, 8.4%) (Figure 5.2).



Age-standardised rates for motorcyclists seriously injured with high threat to life after being involved in either a traffic or a non-traffic accident increased significantly over the 8-year period from 2000-01 to 2007-08. Rates for motorcyclists involved in a traffic accident increased by an annual average of 7.4% (95% CI: 6.5%, 8.3%) while rates for motorcyclists involved in a non-traffic accident increased by an annual average of 3.3% (95% CI: 2.3%, 4.4%) (Figure 5.3).

Rates for pedal cyclists seriously injured with high threat to life after being involved in a traffic accident increased significantly over the period of interest by an annual average of 7.5% (95% CI: 6.2%, 8.7%) over the 8-year period from 2000-01 to 2007-08 while rates for pedal cyclists injured after being involved in a non-traffic accident did not change significantly over the 8-year period (Figure 5.3).

Age-standardised rates for pedestrians seriously injured with high threat to life after being involved in either a traffic or a non-traffic accident decreased significantly over the 8-year period from 2000-01 to 2007-08. Rates for pedestrians involved in a traffic accident decreased by an annual average of 1.6% (95% CI: 0.6%, 2.5%) while rates for pedestrians involved in a non-traffic accident decreased by an annual average of 3.5% (95% CI: 1.5%, 5.6%) (Figure 5.3).



Appendix 1: Tables corresponding to Figures in main body of report

Table A1.1: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population by road user group, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Occupant of MV	24.3	25.3	23.5	24.2	24.8	25.2	25.1	24.0
Driver	14.5	15.0	14.1	15.2	15.5	15.6	15.5	15.2
Passenger	8.3	8.5	7.9	7.7	7.9	8.4	8.3	7.7
Motorcyclist	5.8	6.2	6.0	6.5	7.1	7.9	9.0	9.0
Pedal Cyclist	2.7	2.8	3.0	3.3	3.6	3.8	4.1	4.3
Pedestrian	5.8	5.3	5.0	4.9	5.2	5.0	5.3	4.9

Table A1.2: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population by road user type and by state and territory of residence, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Drivers								
NSW	13.4	12.5	10.9	13.7	14.7	14.3	14.4	12.6
Vic	15.9	17.3	16.3	17.4	17.2	17.1	16.4	17.4
Qld	13.0	14.0	14.5	14.4	14.6	14.5	14.8	14.3
WA	11.6	12.4	11.3	12.4	11.7	12.7	12.8	14.0
SA	18.2	19.9	20.7	18.4	17.4	19.1	17.9	18.5
Tas	16.7	16.9	16.0	11.9	19.8	19.7	19.9	17.1
ACT	8.3	14.4	9.0	14.9	13.2	13.3	13.4	16.7
NT	27.4	22.1	22.8	23.5	25.0	23.2	25.9	32.9
Passengers								
NSW	7.2	7.2	6.6	6.5	7.5	7.6	6.8	6.1
Vic	8.0	8.5	8.5	7.6	7.9	8.5	8.4	7.8
Qld	7.1	8.4	7.7	6.7	7.4	7.7	7.1	7.5
WA	8.6	7.9	7.4	7.9	7.0	6.7	9.3	7.8
SA	12.0	10.7	8.7	9.8	8.7	10.4	11.0	8.6
Tas	9.4	6.8	5.7	8.2	4.9	7.8	8.3	8.1
ACT	7.1	4.9	4.3	7.2	6.1	7.1	6.7	8.0
NT	22.9	20.0	18.6	18.1	22.1	22.5	30.4	27.3

(continued)

Table A1.2 (continued): Road vehicle traffic crashes – high threat to life injury rates per 100,000 population by road user type and by state and territory of residence, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Motorcyclists								
NSW	5.0	5.1	4.6	6.2	6.4	7.3	8.2	7.6
Vic	5.5	6.4	5.8	5.7	6.2	6.7	7.9	7.8
Qld	7.1	8.0	8.7	8.2	10.3	9.7	11.5	11.7
WA	4.4	5.3	5.2	5.7	6.2	7.7	8.1	9.3
SA	7.7	5.5	5.7	6.4	6.6	8.3	9.1	9.1
Tas	5.7	7.1	8.0	6.0	5.5	8.7	7.7	8.7
ACT	4.7	6.8	4.8	4.1	6.2	7.2	9.7	12.4
NT	8.1	9.1	9.0	11.6	7.5	13.3	15.4	14.4
Pedal cyclists								
NSW	2.4	2.5	2.6	3.1	3.0	3.6	3.5	3.8
Vic	3.1	2.7	3.3	3.8	3.7	3.9	4.9	4.7
Qld	3.0	3.4	3.3	3.5	4.3	3.6	4.2	4.2
WA	2.2	2.2	2.7	1.9	2.7	2.7	3.5	3.3
SA	2.9	3.1	3.2	2.8	4.0	4.6	4.7	4.9
Tas	3.2	2.2	2.7	2.9	2.1	4.9	4.1	3.8
ACT	1.2	2.8	3.7	2.3	3.3	4.4	4.4	7.0
NT	4.0	6.0	4.0	4.4	4.6	10.3	4.3	6.7
Pedestrians								
NSW	6.0	5.2	4.9	6.0	6.0	5.4	5.7	5.0
Vic	6.5	6.5	6.3	4.7	5.1	5.3	5.9	5.3
Qld	4.5	4.4	3.8	3.8	4.3	4.2	4.7	4.4
WA	3.8	3.4	4.0	3.5	3.4	3.8	3.8	3.9
SA	6.5	5.6	5.0	3.5	4.7	4.0	4.8	4.2
Tas	4.2	4.1	3.3	4.9	4.0	5.4	3.7	4.0
ACT	2.2	4.4	2.2	4.2	2.8	2.1	1.5	2.1
NT	16.7	10.6	11.4	11.9	11.4	5.8	6.5	10.8

Table A1.3: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population by remoteness of residence, Australia, 2001–02 to 2007–08

Remoteness area	Year of hospitalisation						
	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Major city	32.9	31.3	32.9	34.9	35.7	38.4	37.1
Inner regional	51.0	46.7	48.0	50.5	51.6	49.7	49.3
Outer regional	54.0	51.3	53.6	53.3	59.4	57.2	55.7
Remote	56.5	62.8	52.2	54.6	59.0	75.0	78.5
Very remote	82.9	91.5	80.6	94.6	98.3	86.6	92.1

Note: Rates not shown for 2000–01 since population data for remoteness areas was not available.

Table A1.4: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for residents of major cities by state or territory of residence, Australia, 2001–02 to 2007–08

State of residence	Year of hospitalisation						
	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW	29.2	27.2	33.6	36.0	36.2	35.7	32.7
Vic	39.4	37.6	36.9	38.3	39.9	43.0	42.1
Qld	30.7	31.1	28.9	31.1	31.7	38.3	37.6
WA	27.6	27.4	27.9	29.8	28.8	34.5	33.1
SA	38.3	35.6	31.5	33.5	36.6	39.7	40.1
ACT	34.1	26.0	34.7	34.2	35.4	36.3	46.6

Note: Rates not shown for 2000–01 since population data for remoteness areas was not available.

Table A1.5: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Males								
0–4	8.2	8.7	5.7	6.1	5.5	6.9	5.9	4.6
5–14	20.8	19.3	18.6	17.4	20.3	19.9	19.7	18.5
15–24	101.4	107.1	97.6	104.4	107.8	107.1	105.0	99.3
25–44	59.5	63.3	61.7	63.3	64.8	69.3	73.2	72.5
45–64	39.4	41.7	39.9	42.7	46.7	51.5	55.8	58.4
65+	52.4	56.8	55.8	56.3	61.7	58.5	61.8	63.0
Females								
0–4	6.1	4.8	5.6	4.3	5.3	5.7	4.2	4.2
5–14	11.9	9.5	10.0	9.1	8.9	10.4	8.8	7.6
15–24	45.3	45.7	44.9	44.9	43.5	48.3	46.4	40.6
25–44	23.1	23.1	20.2	23.3	22.0	23.5	25.1	23.5
45–64	25.0	24.6	23.1	23.4	25.8	25.6	25.7	25.7
65+	45.8	43.2	40.8	41.6	47.7	42.0	49.9	45.8

Table A1.6: Road vehicle traffic crashes – high threat to life injury rates per 100,000 for motor vehicle occupants population by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Males								
0–4	3.6	4.7	3.5	4.0	2.6	4.0	3.7	2.4
5–14	6.1	5.8	5.1	5.1	5.1	6.2	5.0	5.0
15–24	62.0	67.5	62.3	66.5	66.1	67.4	62.6	57.4
25–44	31.8	33.6	30.3	31.6	32.0	32.1	33.4	33.5
45–64	22.5	22.3	22.5	21.8	22.9	25.1	24.2	24.1
65+	32.6	37.5	36.1	37.1	40.9	35.9	37.4	36.4
Females								
0–4	2.9	3.5	4.3	3.1	3.2	4.1	3.1	3.0
5–14	5.0	5.1	4.5	4.6	4.4	5.3	4.9	3.4
15–24	37.8	38.3	37.7	39.0	35.4	39.8	37.5	33.5
25–44	17.9	17.8	16.0	17.5	16.5	17.4	18.1	17.2
45–64	20.2	20.5	17.9	17.4	19.6	20.0	19.0	19.3
65+	32.0	32.3	29.6	29.5	35.2	30.7	35.8	34.0

Table A1.7: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for motorcyclists by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Males								
5–14	1.9	1.6	1.5	1.8	1.7	2.3	2.6	2.8
15–24	22.0	23.5	21.4	21.4	24.3	23.4	27.8	25.5
25–44	17.2	19.6	19.9	20.7	21.1	24.5	25.8	25.7
45–64	8.0	9.0	7.3	9.1	12.2	13.5	16.9	19.2
65+	2.5	2.5	2.0	3.1	3.0	3.8	5.0	4.5
Females								
5–14	0.53	0.23	0.38	0.30	0.38	0.23	0.37	0.45
15–24	1.78	0.99	1.88	1.85	1.89	1.29	2.53	1.52
25–44	1.33	1.12	1.32	1.39	1.59	2.12	2.17	1.95
45–64	0.7	0.8	0.9	1.1	1.3	1.5	1.4	1.8
65+	0.45	0.15	0.07	0.28	0.42	0.14	0.33	0.59

Table A1.8: High threat to life injury rates per 100,000 population for motorcyclists involved in a non-traffic accident by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Males								
5–14	5.9	6.1	4.9	8.8	8.1	5.8	7.1	8.3
15–24	20.4	20.7	18.2	18.6	21.5	22.4	21.4	21.6
25–44	10.4	10.3	10.0	10.8	12.7	12.6	12.2	12.7
45–64	3.5	4.4	3.6	4.3	4.1	4.5	4.7	5.4
65+	2.1	2.8	1.5	1.9	2.6	1.3	1.6	2.5
Females								
5–14	1.14	0.91	0.98	1.36	0.90	1.05	1.12	0.90
15–24	1.24	0.91	0.98	1.26	1.38	1.64	1.76	1.45
25–44	0.44	0.24	0.41	0.47	0.64	0.87	0.43	0.56
45–64	0.50	0.27	0.17	0.46	0.41	0.43	0.38	0.56
65+	0.37	0.07	0.29	0.42	0.56	0.41	0.60	0.20

Table A1.9: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for pedal cyclists by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Males								
5–14	6.3	6.3	6.9	6.0	8.3	6.8	7.2	6.5
15–24	7.2	6.6	5.3	7.3	8.2	8.4	6.0	6.5
25–44	4.2	4.6	5.5	6.0	5.6	6.5	7.3	7.0
45–64	3.7	4.7	5.2	5.4	6.3	7.5	9.4	10.0
65+	4.3	3.4	4.4	4.0	5.0	5.8	7.3	9.1
Females								
5–14	2.3	1.2	1.4	1.4	1.7	1.4	1.9	1.6
15–24	0.9	1.1	1.2	1.0	0.6	1.4	1.3	1.1
25–44	0.8	1.0	0.8	1.7	1.1	1.0	1.4	1.5
45–64	0.8	0.8	0.9	0.9	1.3	0.8	1.3	1.3
65+	0.4	0.3	0.4	0.6	0.6	1.1	0.4	0.9

Table A1.10: High threat to life injury rates per 100,000 population for pedal cyclists involved in a non-traffic accident by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Males								
5–14	10.0	9.5	9.6	7.9	9.1	8.4	9.6	10.4
15–24	6.2	7.4	4.7	6.0	7.8	7.2	8.5	6.5
25–44	3.2	3.0	2.9	2.9	3.5	3.8	3.0	3.3
45–64	3.0	3.0	3.2	2.8	4.0	3.5	3.5	3.0
65+	5.1	2.9	2.5	2.2	3.9	3.8	2.8	3.5
Females								
5–14	2.0	1.3	1.6	1.7	1.6	1.1	1.4	1.2
15–24	0.7	0.3	0.6	0.6	0.8	0.6	0.6	0.6
25–44	0.4	0.4	0.5	0.4	0.3	0.6	0.5	0.3
45–64	0.5	0.7	0.5	0.7	0.9	1.0	0.9	1.0
65+	0.6	0.3	0.3	0.1	0.4	0.5	0.4	0.5

Table A1.11: Road vehicle traffic crashes – high threat to life injury rates per 100,000 population for pedestrians by age and sex, Australia, 2000–01 to 2007–08

Age group	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Males								
0–4	4.4	3.2	1.5	1.5	2.1	1.8	1.8	1.4
5–14	6.3	5.5	4.9	4.4	5.3	4.2	4.8	4.0
15–24	9.9	9.3	8.1	8.6	8.0	7.5	8.1	8.9
25–44	6.0	5.2	5.7	4.5	5.6	5.8	6.3	5.8
45–64	5.0	5.6	4.8	6.0	4.7	4.8	4.9	4.5
65+	12.4	12.9	12.9	11.0	12.1	11.9	11.5	11.8
Females								
0–4	2.6	1.3	1.1	1.1	1.9	1.4	1.1	1.1
5–14	4.0	2.9	3.6	2.6	2.6	3.5	1.6	1.9
15–24	4.8	5.0	4.2	3.1	5.2	4.9	4.7	3.8
25–44	2.3	2.6	1.5	2.0	2.0	2.1	2.7	2.1
45–64	3.1	2.5	3.1	3.7	3.3	3.0	3.5	3.1
65+	12.6	10.1	10.3	10.7	10.9	9.2	12.5	9.6

Table A1.12: Persons seriously injured with high threat to life due to non-traffic crashes and crashes unspecified as to traffic or non-traffic as a percentage of persons seriously injured with high threat to life in all land transport crashes by road user type, Australia, 2000-01 to 2007-08

Road user type	Year of hospitalisation							
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Occupant of MV	20.5	19.6	17.6	17.3	18.7	17.4	16.2	17.5
Driver	16.2	15.0	12.8	12.8	13.6	12.1	10.9	12.0
Passenger	17.3	16.2	14.2	14.2	14.7	14.5	10.5	11.9
Motorcyclist	43.5	41.7	40.6	42.2	42.7	39.8	36.9	38.0
Pedal cyclist	50.8	48.6	45.1	42.3	45.5	43.9	40.6	39.2
Pedestrian	22.2	22.5	23.1	22.4	27.0	21.2	18.6	19.9

Table A1.13: Persons seriously injured with high threat to life due to non-traffic as a percentage of persons seriously injured in all land transport crashes by road user type, Australia, 2000-01 to 2007-08

Road user type	Year of hospitalisation							
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Occupant of MV	16.7	15.5	13.7	13.6	14.4	13.1	11.2	12.1
Driver	16.2	15.0	12.8	12.8	13.6	12.1	10.9	12.0
Passenger	17.3	16.2	14.2	14.2	14.7	14.5	10.5	11.9
Motorcyclist	41.5	40.2	38.1	40.2	39.6	37.2	33.7	35.0
Pedal cyclist	48.0	45.0	42.2	38.7	42.3	39.8	37.6	36.0
Pedestrian	14.5	15.4	15.7	14.7	18.6	13.4	13.4	13.7

Table A1.14: High threat to life injury rates per 100,000 population for non-traffic crashes by road user group, Australia, 2000-01 to 2007-08

Road user type	Year of hospitalisation							
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Occupant of MV	5.1	4.9	3.9	4.0	4.4	4.0	3.3	3.5
Driver	2.8	2.6	2.1	2.2	2.4	2.1	1.9	2.1
Passenger	1.7	1.6	1.3	1.3	1.4	1.4	1.0	1.0
Motorcyclist	4.2	4.3	3.9	4.5	4.9	4.9	4.8	5.1
Pedal cyclist	2.6	2.4	2.3	2.2	2.8	2.7	2.7	2.6
Pedestrian	1.1	1.1	1.0	0.9	1.3	0.8	0.9	0.8

Table A1.15: High threat to life injury rates per 100,000 population for non-traffic accidents by road user type and state and territory of residence, Australia, 2000-01 to 2007-08

Road user type	Year of hospitalisation							
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Drivers								
NSW	2.1	1.9	1.7	1.9	2.6	2.2	1.6	1.8
Vic	2.8	2.3	1.8	1.7	1.7	1.6	1.7	1.7
Qld	3.7	3.9	2.7	3.1	2.9	2.1	2.0	2.5
WA	3.2	3.1	1.5	1.9	2.2	2.2	2.2	2.5
SA	2.8	3.0	2.6	3.1	2.2	2.7	2.8	1.7
Tas	4.8	3.7	4.2	3.0	4.1	1.9	1.6	4.9
ACT	0.6	1.1	1.5	2.3	1.2	2.4	1.1	0.5
NT	2.1	3.9	3.1	1.8	7.9	4.4	2.7	5.9
Passengers								
NSW	1.4	1.6	1.0	1.3	1.4	1.2	0.7	1.0
Vic	1.3	1.4	1.0	0.8	1.1	1.3	1.0	1.0
Qld	2.4	2.0	1.7	1.6	1.6	1.5	1.2	1.2
WA	1.9	1.9	1.4	1.3	1.0	1.3	0.8	1.0
SA	2.0	1.2	1.9	1.4	1.7	1.6	0.8	0.8
Tas	2.0	1.5	1.5	0.9	0.9	1.6	1.5	1.0
ACT	0.3	0.6	1.6	1.3	0.8	0.3	0.7	0.3
NT	2.5	3.4	0.8	3.1	5.6	3.2	1.4	2.1
Motorcyclists								
NSW	3.9	3.6	3.1	4.3	4.9	4.8	4.5	4.5
Vic	3.6	4.0	3.6	3.6	3.8	4.4	4.1	4.5
Qld	5.9	5.3	5.0	5.7	6.1	5.8	6.1	6.6
WA	4.4	5.0	4.4	4.4	4.1	4.4	4.8	5.1
SA	3.5	4.2	4.2	5.4	6.1	5.1	5.4	5.3
Tas	2.8	4.2	3.5	3.7	5.0	4.3	4.9	7.4
ACT	1.7	4.7	3.0	4.2	4.0	2.5	1.1	3.3
NT	6.9	4.6	4.5	3.6	7.4	8.4	7.4	6.7
Pedal cyclist								
NSW	2.3	2.0	1.9	2.0	2.7	2.4	2.3	2.2
Vic	2.6	2.6	2.3	2.3	2.6	2.9	3.1	2.8
Qld	3.1	2.7	2.9	2.2	3.0	2.8	2.6	2.9
WA	3.5	2.6	2.2	2.4	3.1	2.5	2.0	1.9
SA	1.9	2.7	2.5	2.6	2.2	3.0	3.0	2.5
Tas	2.7	2.3	1.2	1.7	4.3	2.8	2.7	3.2
ACT	3.4	3.7	2.1	3.6	2.9	2.5	3.3	5.3
NT	0.9	2.3	2.6	5.1	1.9	0.5	2.6	2.6

Table A1.15 (continued): High threat to life injury rates per 100,000 population for non-traffic accidents by road user type and state and territory of residence, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Pedestrians								
NSW	0.9	0.8	0.9	0.9	1.5	0.7	1.0	0.8
Vic	0.9	1.2	0.8	0.9	1.0	0.7	0.8	0.8
Qld	1.5	1.4	1.3	0.9	1.0	1.1	0.6	0.8
WA	1.1	1.3	1.3	1.1	1.2	0.7	0.7	0.6
SA	1.4	1.1	1.2	1.0	2.1	1.1	0.8	1.2
Tas	1.5	0.8	0.6	1.0	1.6	1.0	0.8	1.2
ACT	0.0	0.5	1.3	0.3	1.3	1.2	1.2	0.6
NT	1.6	0.6	2.0	1.7	1.8	0.0	1.6	2.4

Table A1.16: Off road crashes – high threat to life injury rates per 100,000 population by remoteness of residence, Australia, 2001–02 to 2007–08

Remoteness area	Year of hospitalisation						
	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Major city	8.6	7.6	8.3	9.8	8.7	8.3	8.3
Inner regional	18.2	15.7	16.0	17.7	17.8	16.9	17.2
Outer regional	24.3	21.2	21.7	23.9	23.1	23.0	24.3
Remote	46.4	30.7	33.2	37.3	35.8	26.6	33.5
Very remote	39.4	41.8	31.8	40.7	30.9	19.4	26.0

Note: Rates not shown for 2000–01 since population data for remoteness areas was not available.

Table A1.17: Off road crashes – high threat to life injury rates per 100,000 population for residents of major cities by state or territory of residence, Australia, 2001–02 to 2007–08

State of residence	Year of hospitalisation						
	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW	7.2	6.5	7.9	10.1	8.6	7.5	7.1
Vic	8.9	7.6	7.1	8.2	8.2	7.9	8.7
Qld	9.9	9.8	9.8	11.4	9.1	10.0	10.1
WA	9.3	7.3	8.3	9.2	8.4	8.3	8.4
SA	9.2	8.4	9.5	10.9	9.4	9.4	8.0
ACT	11.4	9.6	11.9	11.4	9.3	7.3	10.0

Note: Rates not shown for 2000–01 since population data for remoteness areas was not available.

Table A1.18: Land transport crashes – high threat to life injury rates per 100,000 population by accident location, Australia, 2000–01 to 2007–08

Traffic type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
Traffic	38.8	39.8	37.7	39.2	41.0	42.3	43.9	42.7
Non-traffic	13.2	12.8	11.2	11.7	13.4	12.5	11.8	12.1
Unspecified	5.5	5.2	5.2	5.2	5.9	5.8	5.8	5.5

Table A1.19: Land transport crashes – high threat to life injury rates per 100,000 population by road user type by accident location, Australia, 2000–01 to 2007–08

Road user type	Year of hospitalisation							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
MV occupant (traffic)	24.3	25.3	23.5	24.2	24.8	25.2	25.1	24.0
MV occupant (non-traffic)	5.1	4.9	3.9	4.0	4.4	4.0	3.3	3.5
MV occupant (unspecified)	1.2	1.3	1.1	1.1	1.3	1.3	1.4	1.5
Driver (traffic)	14.5	15.0	14.1	15.2	15.5	15.6	15.5	15.2
Driver (non-traffic)	2.8	2.6	2.1	2.2	2.4	2.1	1.9	2.1
Passenger (traffic)	8.3	8.5	7.9	7.7	7.9	8.4	8.3	7.7
Passenger (non-traffic)	1.7	1.6	1.3	1.3	1.4	1.4	1.0	1.0
Motorcyclist (traffic)	5.8	6.2	6.0	6.5	7.1	7.9	9.0	9.0
Motorcyclist (non-traffic)	4.2	4.3	3.9	4.5	4.9	4.9	4.8	5.1
Motorcyclist (unspecified)	0.2	0.2	0.3	0.2	0.4	0.3	0.4	0.4
Pedal cyclist (traffic)	2.7	2.8	3.0	3.3	3.6	3.8	4.1	4.3
Pedal cyclist (non-traffic)	2.6	2.4	2.3	2.2	2.8	2.7	2.7	2.6
Pedal cyclist (unspecified)	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2
Pedestrian (traffic)	5.8	5.3	5.0	4.9	5.2	5.0	5.3	4.9
Pedestrian (non-traffic)	1.1	1.1	1.0	0.9	1.3	0.8	0.9	0.8
Pedestrian (unspecified)	0.6	0.5	0.5	0.5	0.6	0.5	0.3	0.4

Appendix 2: Trends in fatal injury due to road traffic crashes, 2000–01 to 2007–08

The annual number of road deaths occurring in each state or territory fluctuated over the 8-year period from 2000–01 to 2007–08 (Table A2.1). Queensland, Western Australia and Northern Territory experienced moderate upward trends in the annual number of deaths over this period while New South Wales, Victoria and South Australia experienced downward trends. For Tasmania and the Australian Capital Territory there were no discernible trends either up or down over the period of interest.

Table A2.1: Deaths due to road crashes by state or territory in which the crash occurred, Australia, 2000–01 to 2007–08

State or territory	Year of death							
	2000–01	2001–02	2002–03	2003–04	2004–05	2005–06	2006–07	2007–08
NSW	549	565	520	545	503	536	442	376
Vic	409	451	366	333	335	323	337	330
Qld	309	319	339	297	312	342	366	331
WA	199	171	184	168	174	178	225	221
SA	159	144	161	149	145	146	104	107
Tas	62	44	33	49	53	56	56	41
ACT	20	13	13	9	15	19	17	14
NT	54	44	61	45	40	49	51	69
Australia	1,761	1,751	1,677	1,595	1,577	1,649	1,598	1,489

Notes

1. Data on road crash deaths supplied by the Bureau of Infrastructure, Transport and Regional Economics (BITRE), a division within the Department of Infrastructure and Transport (DIT). The Bureau collects data on road deaths from a variety of sources and produces monthly reports.
2. Excludes deaths which occurred more than 30 days after the date on which injuries were sustained.

When looking at the number of persons seriously injured as a percentage of the number seriously and fatally injured, upward trends were observed for all jurisdictions, except the Northern Territory, in the proportion of persons who survived to discharge from hospital as a result of road vehicle traffic crashes over the 8-year period (Table A2.2). For the Northern Territory there was no discernible trend either up or down. The proportion of those survived was lowest for those who resided in the Northern Territory across the entire 8-year period. Victoria and the Australian Capital Territory recorded consistently higher survival proportions than the other jurisdictions.

When looking at the number of persons seriously injured with high threat to life as a percentage of the number seriously with high threat to life and fatally injured, upward trends were observed for all jurisdictions in the proportion of persons who survived to discharge from hospital as a result of road vehicle traffic crashes over the period of interest. The proportion of those who survived was consistently lower for those who resided in the Northern Territory when compared to other jurisdictions, although not for all years within

the period of interest. As with seriously injured persons, Victoria and the Australian Capital Territory recorded consistently higher survival proportions than the other jurisdictions.

Both measures indicate that in serious road vehicle traffic crashes as a whole, in most jurisdictions, the likelihood of survival rather than death, albeit with serious life-threatening injury, increased over the 8-year period.

Table A2.2: Persons non-fatally injured due to road vehicle traffic crashes as a percentage of the total number of persons seriously and fatally injured due to road vehicle traffic crashes by state and territory of residence, Australia, 2000-01 to 2007-08

Survival percentage ^(a)	Year of hospitalisation							
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
NSW								
Serious injury ^(b)	94.0	94.1	94.2	94.4	94.9	95.0	95.9	96.2
Life-threatening injury ^(c)	80.8	80.0	79.8	82.1	84.1	83.5	86.3	87.3
Vic								
Serious injury ^(b)	94.9	94.8	95.7	95.9	96.1	96.2	96.2	96.4
Life-threatening injury ^(c)	82.5	82.2	84.8	85.8	86.2	87.2	87.4	87.8
Qld								
Serious injury ^(b)	93.7	94.2	93.7	94.8	95.0	94.6	94.7	95.3
Life-threatening injury ^(c)	81.1	82.5	81.6	83.4	84.5	83.3	83.5	84.9
WA								
Serious injury ^(b)	91.0	92.3	91.6	93.1	93.1	93.2	92.4	92.8
Life-threatening injury ^(c)	75.2	78.6	77.1	79.3	78.8	80.4	78.4	79.5
SA								
Serious injury ^(b)	93.4	93.9	93.5	93.9	93.9	94.1	95.9	95.9
Life-threatening injury ^(c)	82.2	83.2	81.4	81.3	82.1	83.8	88.1	87.7
Tas								
Serious injury ^(b)	90.9	92.7	94.5	92.5	92.4	92.9	93.0	94.6
Life-threatening injury ^(c)	76.6	81.0	83.8	77.6	77.5	80.5	79.9	84.0
ACT								
Serious injury ^(b)	92.0	95.8	94.9	97.3	96.0	96.3	96.9	97.6
Life-threatening injury ^(c)	78.9	89.5	86.7	92.6	88.2	86.5	88.5	92.1
NT								
Serious injury ^(b)	89.0	91.2	87.9	90.5	90.7	89.2	90.7	88.1
Life-threatening injury ^(c)	75.6	77.3	70.5	77.2	79.6	76.1	78.8	74.3
Australia^(d)								
Serious injury ^(b)	94.0	94.1	94.2	94.4	94.9	95.0	95.9	96.2
Life-threatening injury ^(c)	80.8	80.0	79.8	82.1	84.1	83.5	86.3	87.3

(a) Calculation of survival percentage assumes that injured persons discharged from hospital alive did not subsequently die as a result of their injuries and excludes deaths which occurred more than 30 days after the date on which injuries were sustained.

(b) Indicates the number of persons seriously injured as a percentage of the number seriously and fatally injured persons.

(c) Indicates the number of persons seriously injured with high threat to life as a percentage of the number seriously injured with high threat to life and fatally injured persons.

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

Appendix 3: Data issues

Serious injury

National hospital separations data were sourced from the Australian Institute of Health and Welfare (AIHW) National Hospital Morbidity Database (NHMD). A 'separation' is a term used in Australian hospitals to refer to a formal, or statistical process, by which an episode of care for an admitted patient ceases (AIHW 2001). An 'episode of care' is a period of health care characterised by only one care type. This is perhaps best understood as a stay in a particular ward in a hospital. For example, a person who is in an acute care ward and is then transferred to a rehabilitation ward will have undergone two episodes of care and hence two separations within the hospital.

Hospital cases were defined as being due to a land transport accident if they contained a first reported Chapter 20 external cause code in the ICD-10-AM range V01–V89. Cases with a Principal diagnosis other than injury and cases in which land transportation only appears as an additional external cause code were excluded on the grounds that injury due to a land transport accident was not recorded as being the main reason for admission to hospital (Table A3.1). This resulted in a starting file of 428,788 records.

Table A3.1: Selection criteria for hospital records of land transport injury

Record occurring from 1 July 2000 to 30 June 2008	Persons
Records with an ICD-10-AM 'Land Transport Accident' code (V01–V89) as external cause anywhere in the record ^(a)	489,047
Records with a 'Land Transport Accident' code (V01–V89) as first reported external cause ^(b) , and Injury as a Principal Diagnosis (S00–T98)	484,631
	428,788

(a) There were 4,416 records with a first reported external cause code of another type of injury (e.g. complications of surgical and medical care, other unintentional injuries, falls, intentional self-harm etc.) but a 2nd or subsequent external cause code indicating a land transport accident.

(b) There were 55,843 cases with a first reported external cause code indicating a land transport accident but a Principal diagnosis outside of the injury range (S00–T98). The most common Principal diagnoses were care involving use of rehabilitation procedure, unspecified (Z50.9, $n = 20,801$), examination and observation following transport accident (Z04.1, $n = 5,616$), cervicalgia (M54.2, $n = 2010$), other specified surgical follow-up care (Z48.8, $n = 1,484$), Other specified diseases and conditions complicating pregnancy, childbirth and the puerperium (O99.8, $n = 1,379$) and Care involving use of other rehabilitation procedures (Z50.8, $n = 1,195$).

Hospital cases were defined as being due to road vehicle traffic crashes if they contained a Principal Diagnosis in the range S00–T98 and a first reported external cause code of: V0(1–6).1, V09.2(3), V1(0–8).4(5,9), V19.4(5,6,9), V2(0–8).4(5,9), V29.4(5,6,9), V3(0–8).5(6,7,9), V39.4(5,6,9), V4(0–8).5(6,7,9), V49.4(5,6,9), V5(0–8).5(6,7,9), V59.4(5,6,9), V6(0–8).5(6,7,9), V69.4(5,6,9), V7(0–8).5(6,7,9), V79.4(5,6,9), V81(2).1, V82.9, V8(3–6).0(1,2,3), V87, V89.2(3).

Seriously injured 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 one or more nights stay in a hospital bed (i.e. deaths are excluded). As discharge from hospital can include transfer to home, to another acute care hospital and to another form of care (e.g. rehabilitation), a method has been used in this report to reduce over-counting of injury cases by omitting separations in which the mode of admission is recorded as being by

transfer from another acute-care hospital, on the grounds that such cases are likely to result in two or more separation records for the same injury.

Records for Australian hospital separations occurring 1 July 2000 to 30 June 2008 were included. They were coded according to the second to fifth editions of ICD-10-AM (NCCH 2000, 2002, 2004, 2006);

Serious injury with a high threat to life

High threat to life serious injury cases are a subset of the serious injury data described above, and also referred to as ‘life-threatening’ injuries in some places in this report. They are selected on the basis of having an ICD-based Injury Severity Score (ICISS) of less than 0.941. ICISS is a measure of injury severity based upon a patient’s injury diagnoses. The ICISS measure for this report is based upon ICD-10-AM coding and was derived using Australian hospital separations data (Stephenson et al. 2004). ICISS involves calculating a Survival Risk Ratio (SRR), i.e. the probability of survival, for each individual injury diagnosis code as the ratio of the number of patients with that injury code who have not died to the total number of patients with that diagnosis code. Thus, a given SRR approximates the likelihood that a patient will survive a particular injury. Each patient’s ICISS score (survival probability) is the product of the probabilities of surviving each of their injuries individually. Hence, for a patient with a single injury, their ICISS is equal to the SRR for that injury, while for a patient with multiple injuries, their ICISS is equal to the product of all the SRRs for those injuries. A patient’s ICISS can vary from 0 (most severe) to 1 (least severe).

Five-year trends in age-standardised rates from 2002–03 to 2006–07 for those seriously injured with high threat to life in a road vehicle traffic crash have previously been reported (Henley & Harrison 2009). This report utilises the same set of SRRs and methodology to calculate ICISS as outlined on pages 55–56 of that report.

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

Denominators, rates and confidence intervals

With the exception of Table 3.3 and Figures 3.5 and 3.6, all rates in this report were calculated using, as the denominator, the final estimate of the estimated resident population as at 31 December in the relevant year (e.g. 31 December 2006 for 2006–07 data). The rates in Table 3.3 and Figures 3.5 and 3.6 were calculated using, as the denominator, the number of each vehicle type registered by state and territory sourced from the Australian Bureau of Statistics Motor Vehicle Census (ABS 2008a) and the kilometres travelled, sourced from the Survey of Motor Vehicle Use, Australia (ABS 2008b). Direct standardisation was used to age-standardise rates, using the Australian population in 2001 as the standard (ABS 2003). Note that it is a convention of the ABS and AIHW to change the standard reference population only once a decade, to the latest yy01 census.

Age-standardised rates and 95% confidence intervals were calculated in Stata version 10.1 statistical software (Stata Corporation 2008) using the `-stdize-` command. Estimated trends in age-standardised rates were reported as annual per cent change obtained using poisson

regression modelling performed in Stata. This modelling is detailed on page 70 of 'A guide to statistical methods for injury surveillance' (Berry & Harrison 2006). Confidence intervals (CI) were used to determine if average annual increases or decreases over time were statistically significant. For example, (95% CI: 1.3%, 2.4%) indicates that there is a 95% probability that the real rate of annual average increase is between 1.3% and 2.4%. If the confidence interval includes zero e.g. (95% CI: -1.3%, 1.2%), then any change in rates over time is not considered to be significant. The use of the terms 'significant' or 'significantly' throughout this report indicate an outcome which is statistically significant. State and territory of residence rather than state and territory of hospitalisation are used for all calculations in this report. Further information regarding the reasons to use state of residence can be found on page 27 of a previous land transport report (Henley & Harrison 2009).

Classification of remoteness area

Remoteness area in this report refers to the place of usual residence of the person who was admitted to hospital. The remoteness areas were specified according to the ABS Australian Standard Geographical Classification (ASGC) (ABS 2001). Remoteness is defined in a manner based on the Accessibility/Remoteness Index of Australia (ARIA), which was developed for the Commonwealth Department of Health and Aged Care by the National Key Centre for Social Applications of Geographic Information Systems (GISCA), Adelaide University. According to this method, remoteness is an index applicable to any point in Australia, based on road distance from urban centres of five sizes. The ABS has provided tables that specify the proportion of the population of each Statistical Local Area (SLA) in Australia whose place of residence is in each of five segments of the remoteness index. These segments are:

- Major cities, with ARIA index value of 0 to 0.2
- Inner regional, with ARIA index value of >0.2 and ≤2.4
- Outer regional, with ARIA index value of >2.4 and ≤5.92
- Remote, with ARIA index value of >5.92 and ≤10.53
- Very remote, with average ARIA index value of >10.53.

These tables were used to assign records to the five areas, on the basis of the SLA of usual residence of the person.

Most SLAs lie entirely within one of the five areas. If this was so for all SLAs, then each record could simply be assigned to the area in which its SLA lies. However, some SLAs overlap two 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 2001 census. For hospitalisations, each record in the set having a particular SLA code was assigned to one or other of the areas probabilistically, in proportion to the resident population of that SLA. The resulting values are integers.

The hospital datasets used for this report do not contain information on the crash location and it is therefore not possible to determine with certainty if the crash occurred in the remoteness area of residence of the person injured. Remoteness area of residence is nonetheless a useful classification in itself and an indicator of crash location if it can be assumed that most crashes in which people are seriously injured occur in the vicinity of where they live. The DIT estimates, based on 2000 to 2003 data, that around 30% of operators (drivers, motorcyclists and cyclists) or persons killed in fatal road crashes are involved in crashes within their postcode of residence and a further 50% or more are involved in a fatal road crash within 100 kilometres of the centroid of their postcode of residence (but not

within their postcode of residence). It is likely that non-fatal crashes in which people are seriously injured follow a similar pattern.

Suppression of small cell counts in tables

Cell counts in tables that are five cases or fewer have been suppressed as have rates derived from them, to protect confidentiality and because values based on very small numbers are sometimes difficult to interpret. In the instances where only one cell in a row or column has a count of four or less, counts of one or more other cells in the same row or column have generally also been suppressed.

Comparability with other reports

Australian hospitals use an Australian modification of the international standard classification called the International Statistical Classification of Diseases and Related Health Problems (ICD) when reporting data on persons injured and subsequently admitted to hospital (morbidity data). ICD provides a nationally consistent basis for looking at morbidity due to transport accidents of all kinds (road, rail, water and air). However, it is not necessarily consistent with the approach taken by the Bureau of Infrastructure, Transport and Regional Economics (BITRE) or others in looking at safety in each transport mode individually. For example, road safety statistics compiled by the BITRE are focused on crashes on public roads, whereas ICD covers road crashes both on and off public roads. Aviation statistics compiled by the BITRE do not cover hang-gliders, gliders and other forms of non-powered aircraft, whereas ICD does.

Serious injury data series published previously by the BITRE for the period 1999–00 to 2002–03 excluded same-day separations from the definition of serious injury. Previously published AIHW reports dealing with serious injury due to land transport accidents for the periods 2003–04 (Berry & Harrison 2007) , 2005–06 (Berry & Harrison 2008) and 2006–07 (Henley & Harrison 2009) include same-day separations in the figures. This effectively means the threshold for serious injury is now ‘admitted to hospital’, regardless of the length of stay. These AIHW reports included a small section examining trends in serious injury due to land transport accidents over a rolling 5-year period. This current report is the first in a line of reports to provide a more detailed trend analysis over a more extended period of time, in this instance 8 years. Unlike previous reports, the bulk of the analysis pertains to injuries which are considered to be high threat to life.

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

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