NSW GOVERNMENT | Transport for NSW

Centre for Road Safety

Pedal cycle trauma trends

Report

March 2017 | Version: 1

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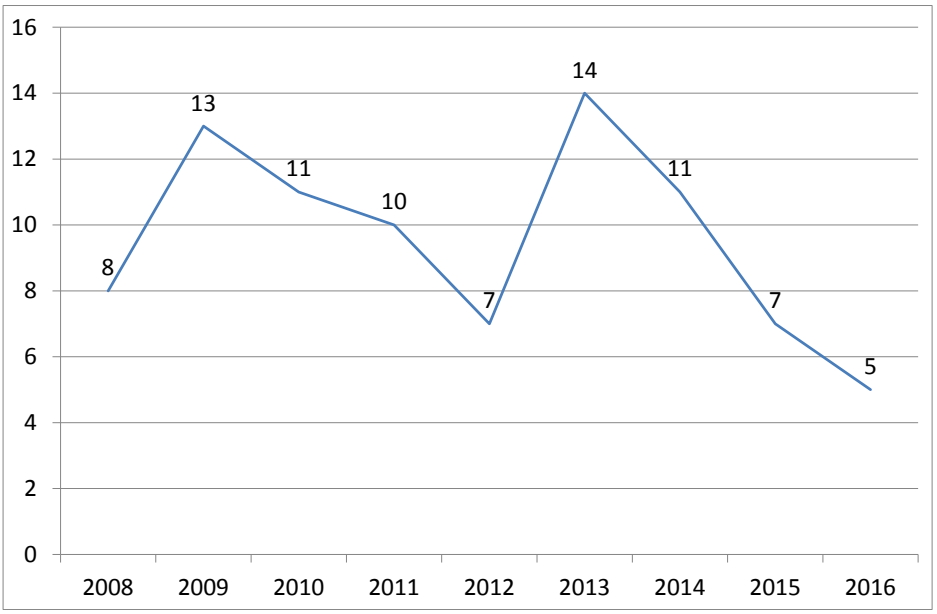
Contents

1 Pedal cyclist fatalities and serious injuries since 2008

The following overview of pedal cyclist trauma in NSW is limited to the most recent available data. For fatalities, this covers the calendar years 2008 to 2016. For serious injuries, data up to 30 June 2016 are used, and it is convenient to analyse serious injuries in terms of financial years. For both fatalities and serious injuries, the 2016 data are preliminary and subject to change.

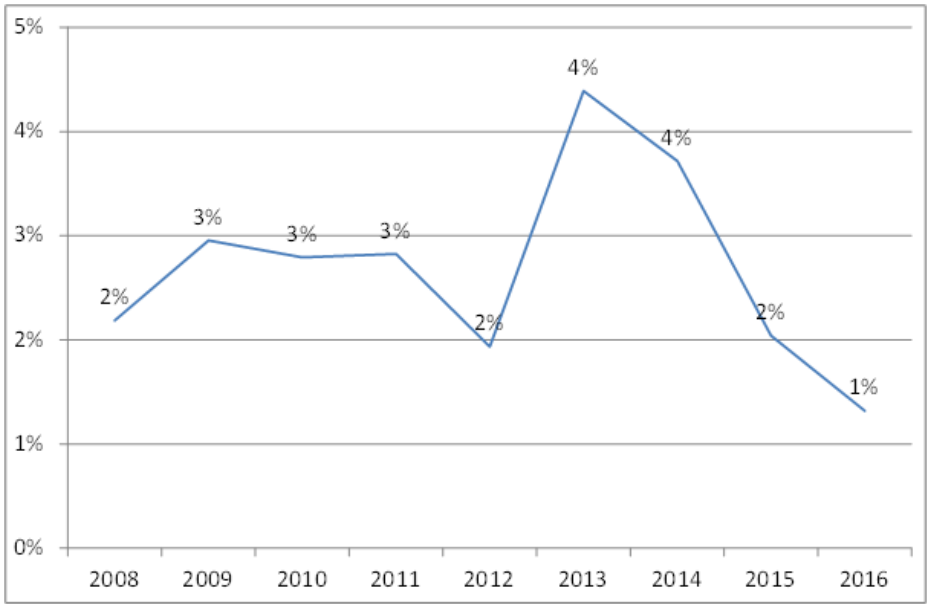
1.1 Fatalities

1.1.1 Pedal cyclist fatalities each year 2008 to 2016



Pedal cyclist fatalities since 2008 have ranged between 5 and 14 per annum, with the 2016 result being the lowest annual total since records began in the 1920s.

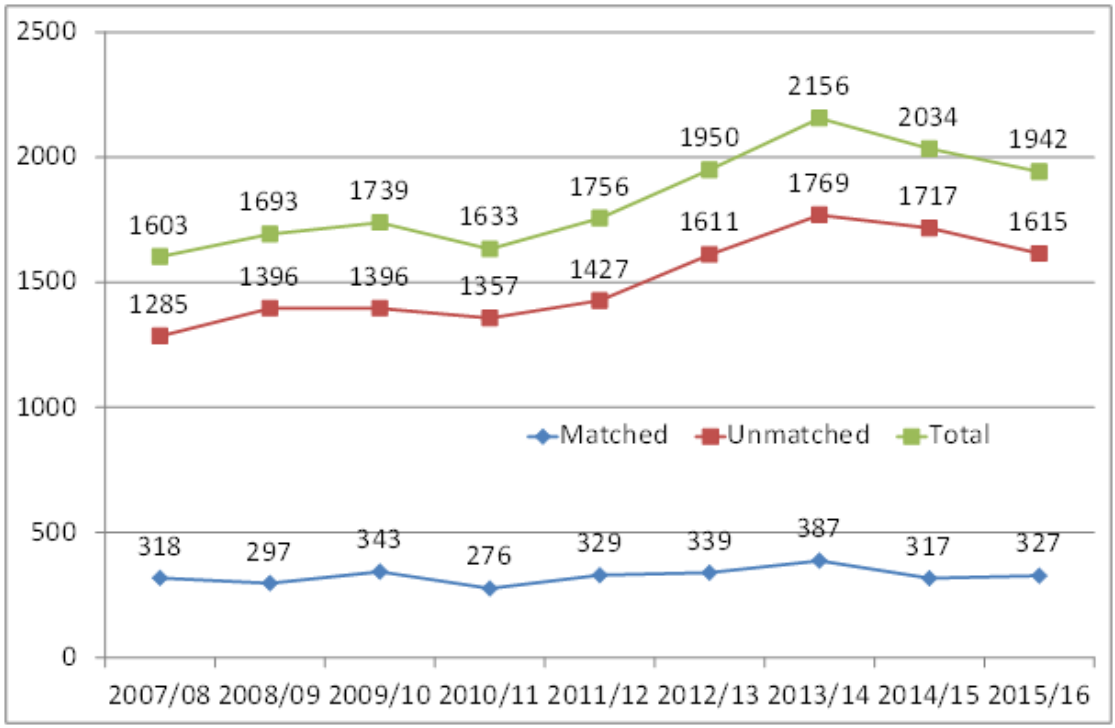
1.1.2 Pedal cyclist fatalities as a proportion of all fatalities each year 2008 to 2016



Pedal cyclist fatalities were 3% of total fatalities over the years 2008 to 2016, with little variation from that average.

1.2 Serious injuries

1.2.1 Pedal cyclist serious injuries each financial year 2007/08 to 2015/16



Serious injuries (total hospitalisations) amongst pedal cyclists are higher, and are the third highest road user class (after drivers and motorcyclists) ahead of passengers and pedestrians. Only 18 per cent of pedal cyclist hospitalisations are able to be matched to a police crash report. For matched pedal cyclist serious injuries there is a great deal of information regarding the person, location, crash circumstances.

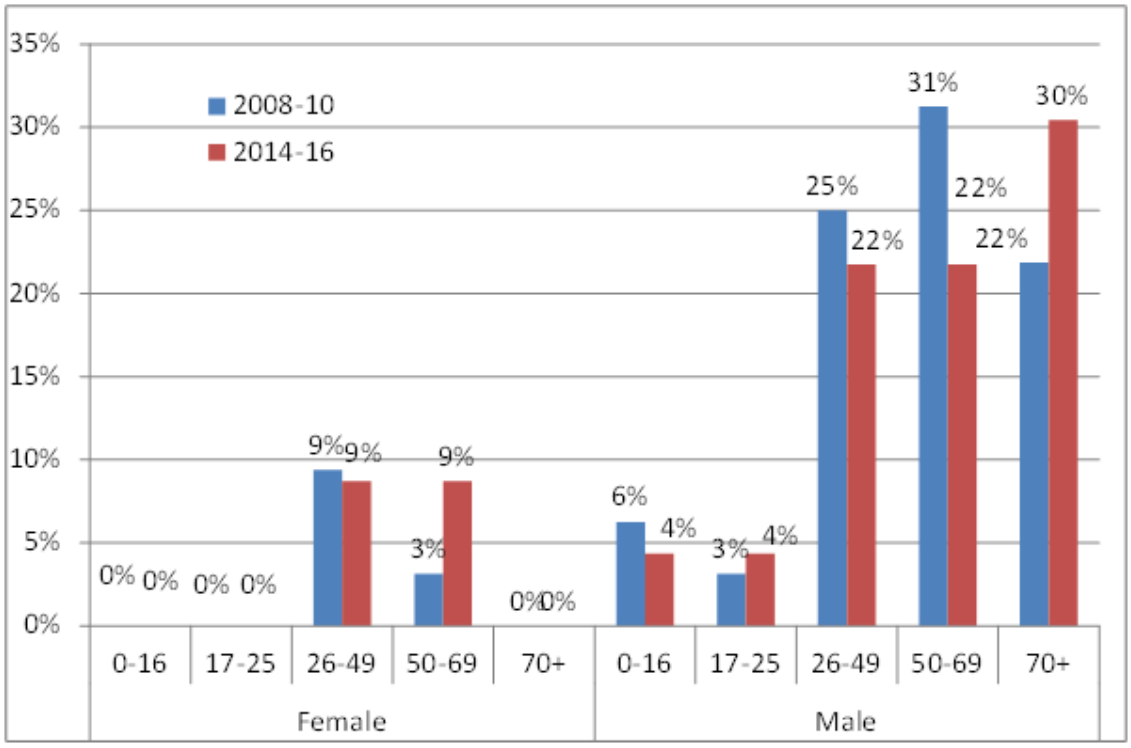
However, for unmatched serious injuries the information is limited to demographics and a hospital coded crash counterpart.

In contrast to fatalities, there had been an increasing trend for pedal cyclist serious injuries (total hospitalisations) through to 2013/14, but some decreases since then.

Figure 1.2.2 shows that the majority of fatalities are males aged 26 years or more. A very small proportion of the fatalities are children.

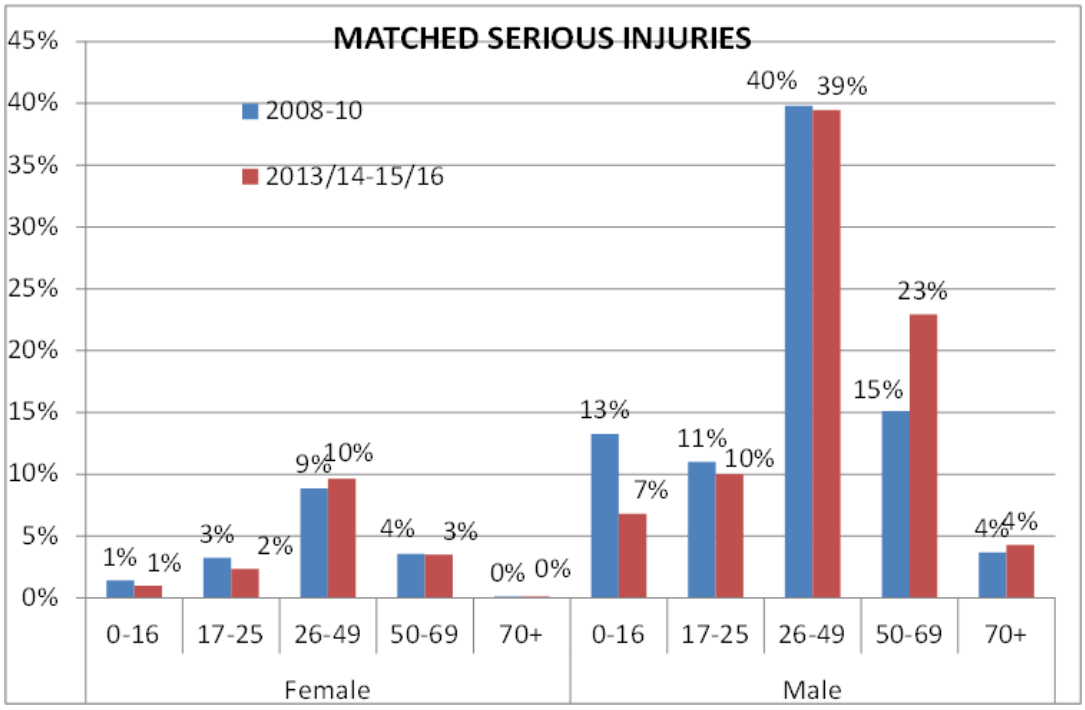
From 2008 to 2016, the youngest female pedal cyclist fatality was 26 years. There were four male fatalities under 16 years. In 2014 to 2016 almost one third (30 per cent) of all pedal cycle fatalities were aged 70 years or more

1.2.2 Distribution of pedal cyclist fatalities by age and gender, comparing 2008-10 with 2014-16

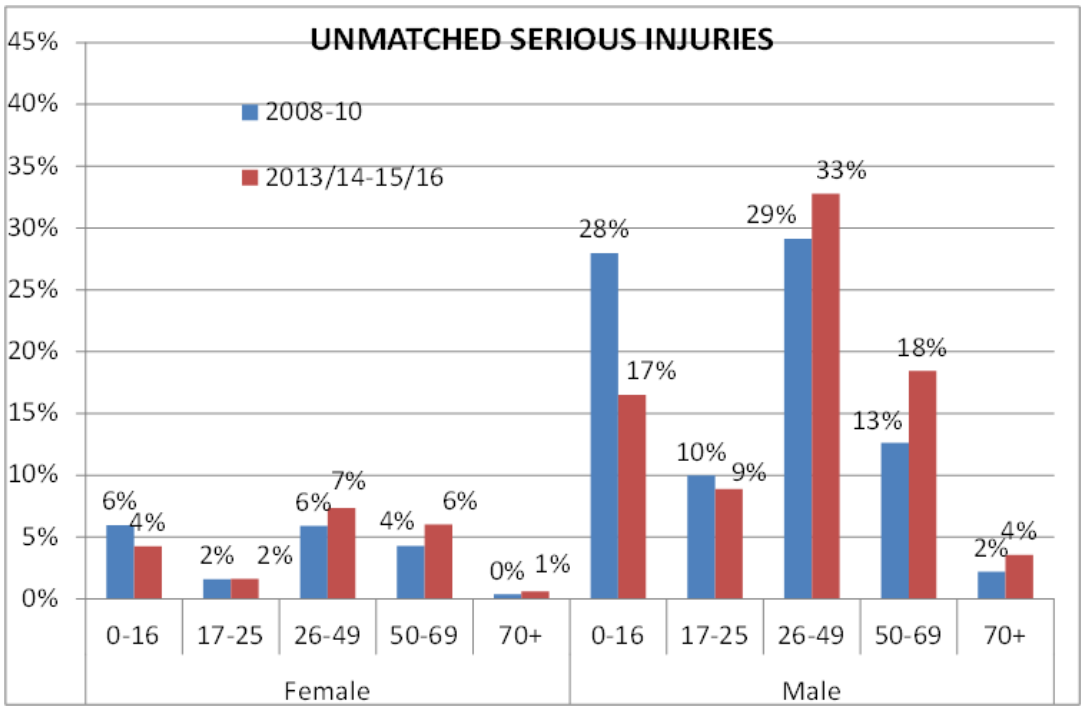


Males are also a majority of serious injuries (matched and unmatched) with males aged 26 to 49 years the largest age group for matched and unmatched serious injuries. The proportion of serious injuries aged under 17 years decreased significantly between 2008-10 and the three years ending June 2016 for both matched and unmatched serious injuries.

1.2.3 Distribution of pedal cyclist serious injuries by age and gender, where hospitalisation is matched to crash record, comparing 2008-10 with three years ended 30 June 2016



1.2.4 Distribution of pedal cyclist serious injuries by age and gender, where hospitalisation remains unmatched, comparing 2008-10 with three years ended 30 June 2016

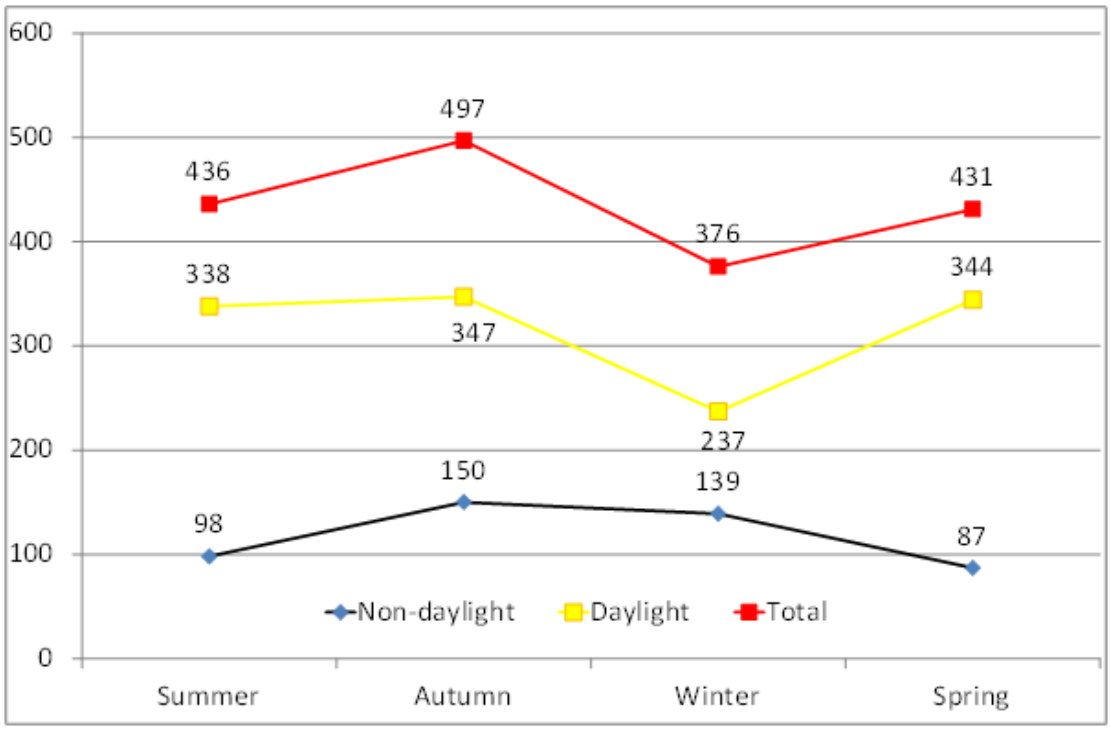


The age distributions of matched and unmatched serious injuries are different. The unmatched have larger proportions in the 16 years and under group. The 26 to 49 years group is a smaller, but still substantial, proportion in the matched compared to the unmatched.

1.3 Natural lighting/seasons

The majority of fatalities and serious injuries occur in daylight, with slightly more in Autumn.

1.3.1 Pedal cyclist fatalities and matched serious injuries in different seasons, five years ended 30 June 2016



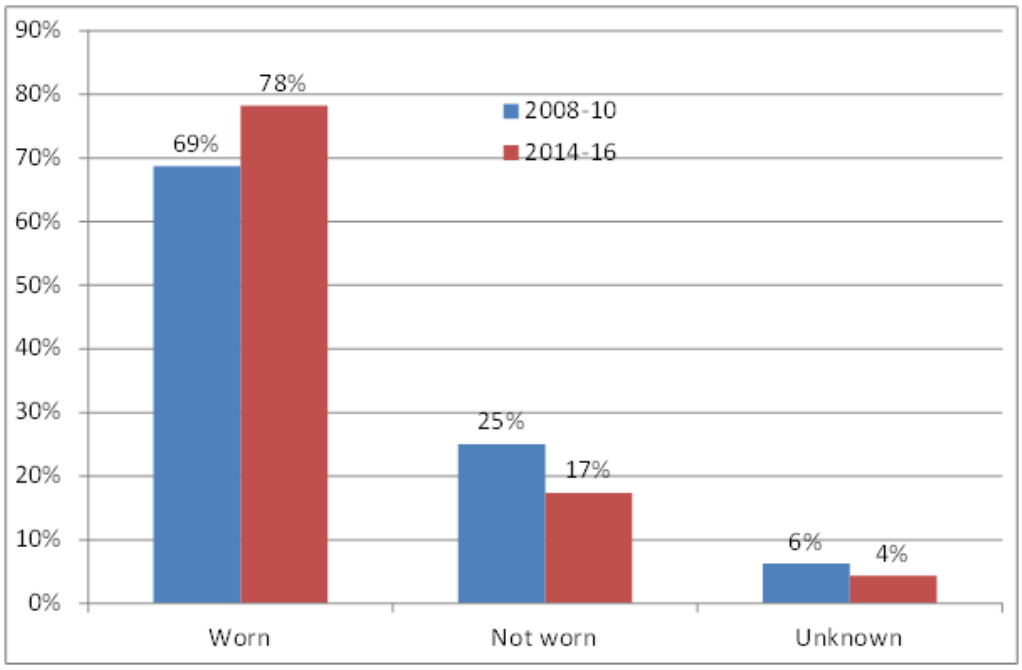
1.4 Helmets

One in five pedal cycle fatalities are not wearing a helmet, though there has been a small improvement between 2008-10 to 2014-16.

1.4.1 Helmet use in pedal cyclist fatalities 2012 to 2016

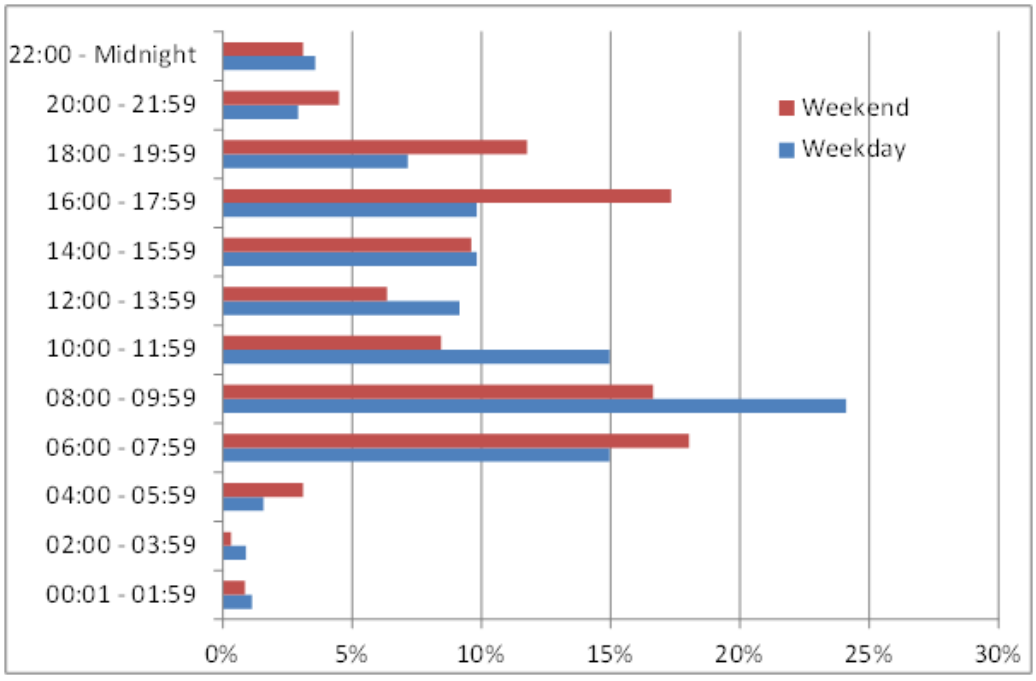
Helmet used				
Age group	**Yes**	**No**	**Unknown**	**Total**
0 to 16	1	2	0	3
17 to 25	2	1	0	3
26 to 49	12	5	0	17
50 to 69	14	0	0	14
70+	5	1	1	7
Total	**34**	**9**	**1**	**44**

1.4.2 Proportion of pedal cyclist fatalities by helmet use, comparing 2008-10 with 2014-16



Aggregating pedal cyclist fatalities and matched serious injuries by hour of day and weekday / weekend tends to show that weekday serious casualties are highest during the morning 6am to midday whilst the peaks for the weekend were between 6am 10am and in the afternoon between 4pm and 6pm.

1.4.3 Proportions of weekday fatalities and matched serious injuries and proportions of weekend fatalities and matched serious injuries, by two-hour daily intervals, five years ended 30 June 2016



1.5 Road user movement

The Road User Movement (RUM) codes are very similar to RUM or DCA codes used in other Australian jurisdictions. The following analysis groups RUMs.

“Out of control”, for a pedal cycle, means that the bike fell onto its side.

1.5.1 Pedal cyclist fatalities 2012 to 2016, RUM groups

RUM group	No.
Manoeuvring	9
Cross traffic	1
Right through	3
Out of control on straight	4
Other Turning Adjacent	0
Lane Side Swipe (includes lane change left / right)	3
Rear end	7
Vehicle door	0
Off road on straight	0
Other Turn Side Swipe/Other Same Direction	5
Out of control on bend	2
Head on (not overtaking)	4
Other	5
Off road on bend	1
Total	**44**

There are relatively small numbers when fatalities are disaggregated by RUM group.

The numbers are much larger for matched serious injuries though they may differ from the much larger unmatched data as implied from the crash counterpart.

The unmatched dataset suggest more single vehicle crashes for pedal cyclist hospitalisations.

1.5.2 Pedal cyclist matched serious injuries, five years ended 30 June 2016, RUM groups

RUM group	No.
Manoeuvring	323
Cross traffic	236
Right through	161
Out of control on straight	161
Other Turning Adjacent	157
Lane Side Swipe (includes lane change left / right)	140
Rear end	118

RUM group	No.
Vehicle door	81
Off road on straight	60
Other Turn Side Swipe /Other Same Direction	58
Out of control on bend	51
Head on (not overtaking)	49
Other	80
Off road on bend	21
Total	**1,696**

1.6 Location

Compared with matched serious injuries, pedal cycle fatalities are more likely to occur on classified roads. Sixty per cent of matched serious injuries occurred on unclassified local roads.

1.6.1 Pedal cyclist fatalities 2012-16, by road classification and urbanisation

	Metropolitan		Country		Total	
	No.	%	No.	%	No.	%
Freeway/motorway	1	3%	0	0%	1	2%
State highway	4	12%	2	18%	6	14%
Other classified road	12	36%	4	36%	16	36%
Unclassified road	16	48%	5	45%	21	48%
Total	**33**	**100%**	**11**	**100%**	**44**	**100%**

1.6.2 Pedal cyclist matched serious injuries five years ended 30 June 2016, by road classification and urbanisation

	Metropolitan		Country		Total	
	No.	%	No.	%	No.	%
Freeway/motorway	11	1%	0	0%	11	1%
State highway	107	8%	71	17%	178	10%
Other classified road	396	31%	95	23%	491	29%
Unclassified road	761	60%	255	61%	1,016	60%
Total	**1,275**	**100%**	**421**	**100%**	**1,696**	**100%**

Three quarters of fatalities and three quarters of matched serious injuries were on metropolitan roads.

1.7 Serious injury characteristics

The body region injured per the principal diagnosis is identified in the data. In the case of multiple specified injuries, the condition which presents the most serious threat to life would be selected as the principal diagnosis in the hospital data. That is, each injured person has one body region for the principal diagnosis, but can have injuries in other body regions as well.

For pedal cyclists, for serious injuries that met a high threat to life criterion based on the worst injury, the most common principal injury type was head injury. Of the 9,834 pedestrian serious injuries for whom the principal injury was known, 2,146 (22%) were head injuries. Of the 1,947 high threat to life injuries, 838 (43%) were head injuries.

For matched serious injuries there is information on helmet use.

1.7.1 Pedal cyclist matched serious injuries five years ended 30 June 2016, helmet use by whether head injury was the principal injury type

		Helmet				
		Yes	No	Unknown	Total	Wearing rate
Head injury	Yes	288	133	61	482	60%
	No	890	150	172	1212	73%

Those who had head injury as their principal injury were less likely to have been wearing a helmet.