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UNINTENTIONAL LAND TRANSPORT INJURY HOSPITALISATIONS IN PUBLIC ACUTE HOSPITALS IN QUEENSLAND:

AN EIGHT YEAR SNAPSHOT 2009/10-2016/17

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BACKGROUND

Land transport-related crashes are a significant cause of unintentional injuries and fatalities in Queensland. Whilst the trends and patterns in on-road/traffic-related fatalities are well captured and reported using police crash data (capturing only those cases reported to police), there has been less coverage of the broader burden of land transport-related injury hospitalisations in Queensland (including on-road and off-road incidents). The most recent comprehensive estimates of road vehicle traffic-related injury hospitalisations in Australia (published in 2016) reported on trends from 2001-2010, showing an annual rate of change of serious road vehicle traffic injury of 1.4%, and in increase in high threat to life injuries for motorcyclists (3.9% rate change per annum) and pedal cyclists (5% rate change per annum)1. In addition, a recent StatBite from Statistics Services Branch Queensland reported brief summary figures for hospital separations (including transfers) due to road traffic vehicle crashes from 2010-20152. There is a significant interest in more comprehensive figures regarding acute episodes of care, demographics, road user characteristics and changes over time.

Through the combined work of Queensland Health's Statewide Trauma Clinical Network (STCN), the Health Improvement Unit, the Statistical Services Branch, Metro North Hospital and Health Service, and with funding from MAIC and Queensland Health, work is currently underway to establish a Statewide Trauma Data Warehouse linking data across the trauma response, acute care, rehabilitation and prevention continuum. This project will take several years for fruition. In the meantime, to enable access to broad injury hospitalisation data, the Queensland Health Statistical Services Branch (SSB) developed an Injury Hospitalisation Data Dashboard to assist the planning of the STCN and other interested stakeholders. This snapshot report is the second in a series of reports using the Injury Hospitalisation Data Dashboard drawing from an extract of unintentional land transport injury data provided by SSB. We welcome feedback and suggestions.

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[1] AIHW: Henley G & Harrison JE 2016. Trends in serious injury due to road vehicle traffic crashes, Australia 2001 to 2010. Injury research and statistics series no. 89. Cat. no. INJCAT 165. Canberra: AIHW.

[2] Statistical Services Branch, Queensland Health 2016. Statbite #72: Hospital Separations due to Road Traffic Vehicle Crashes, Queensland, 2010 to 2015.

METHODOLOGY

The Injury Hospitalisation Data Dashboard compiles data from all Queensland public acute hospitals using the Queensland Hospital Admitted Patient Data Collection (QHAPDC) with the following data scope:

1. Data are for admitted patient episodes of care with separation date between 1 July 2009 and 30 June 2017 (not admission date)
2. Acute episode care types only (i.e. does not include care types of rehabilitation, mental health etc)
3. Admitted for 24 hours or more OR death occurs within 24 hours of admission.
4. Excludes episodes with psychiatric stays.
5. 5. Data limited to 0-14yrs with principal diagnosis of ICD10AM codes S00-S99, T00-T75, T78, OR 15+ yrs with principal diagnosis of ICD10AM codes S00-S99, T00-T35, T63, T66-T71, T75.
6. Injury code present on admission ('condition onset' = 1)
7. External Cause codes listed represent the first external cause code recorded for that episode of care.
8. Activity indicator, ICD-10-AM external cause codes exist for selected codes of:
   - Sports/Leisure - U50-U72
   - Work for income - U73.0
   - Home duties/education - U73.1
   - Other - U73.2-U73.9
   - No activity - Not U50-U73

9. HHS: Hospital and Health Service as at July 2014

The extract for unintentional land transport injury episodes of care (referred to in remainder of report as *land transport episodes*) include all cases with an external cause code in the range V00-V79 (represented as the first external cause code recorded for that episode of care). This includes on-road and off-road (traffic and non-traffic) land transport episodes involving pedestrians (V00-V09), pedal cyclists (V10-V19), motorcyclists (V20-V29), occupants of three-wheeled motor vehicles (V30-V39), car occupants (V40-V49), occupants of pick-up trucks/vans (V50-V59), occupants of heavy vehicles (V60- V69), and bus occupants (V70-V79). This excludes land transport episodes where the vehicle is unspecified and those involving riding an animal or being an occupant of an animal drawn vehicle, occupants of railway vehicles, occupants of streetcars, and occupants of special vehicles (used in agriculture/construction, and all-terrain vehicles (quad bikes etc)).

This snapshot report presents raw counts not age standardised rates as data are presented for episodes of care not individual patients. It is not possible to report the number of individual patients using the data dashboard as without data linkage of patient records it is not possible to identify multiple episodes of care for patients across hospitals. For similar reasons, the report does not present rates per number of registered vehicles or rates adjusted for exposure.

The data for this report were current as of the 22nd August 2017. The 2016/17 data are preliminary and subject to change.

ACTIVITY AND TRENDS OVER TIME-ALL AGES

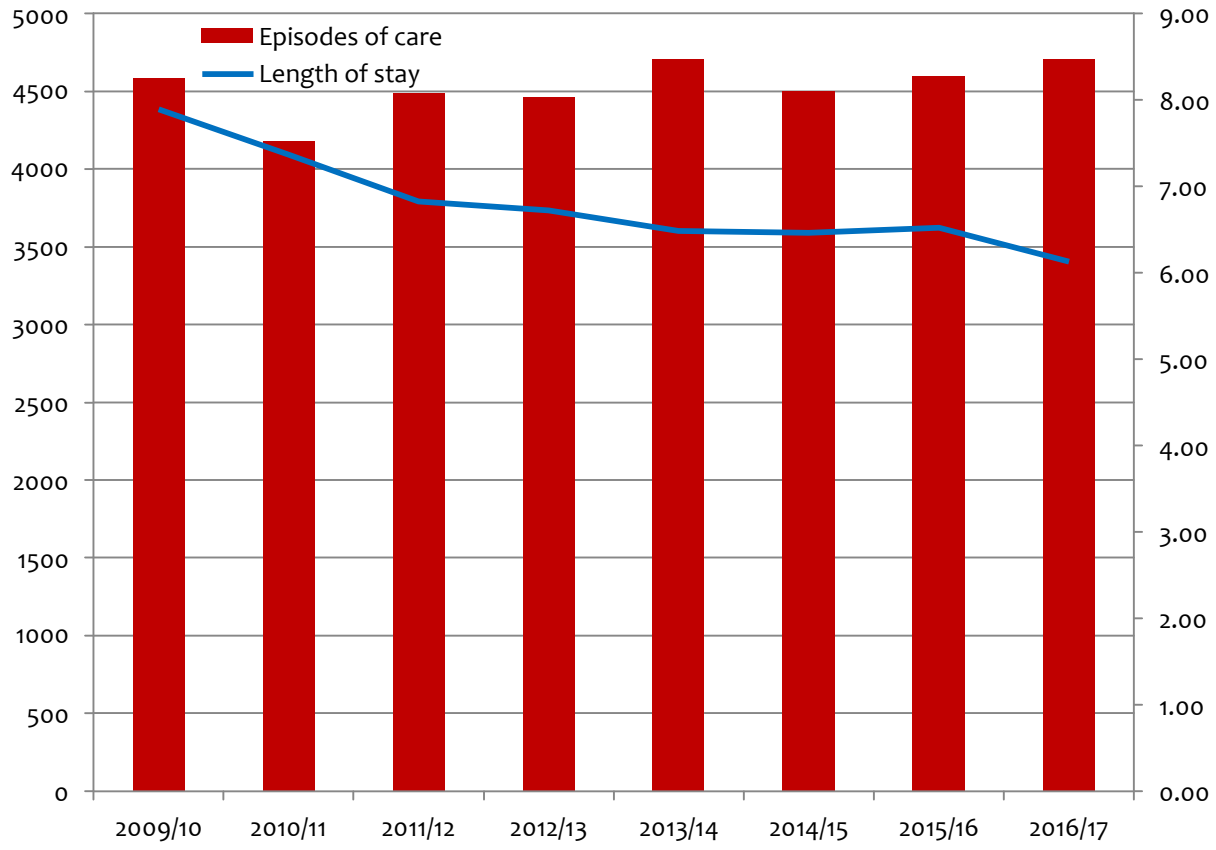
Over the last eight years, land transport-related injury has accounted for 36,210 episodes of care in Queensland public acute hospitals, resulting in 245,840 patient days, with an average length of the acute care stay of 6.8 days (See Table 1 and Figure 1). The annual number of episodes of care related to land transport-related injury has fluctuated over time with a high of 4706 in 2016/17. The average acute care length of stay has gradually reduced over time from almost 8 days in 2009/10 to just over 6 days in 2016/17. There were 512 land transport-related injury episodes that ended with death in Queensland public acute hospitals.

Table 1: Land transport episodes over time in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	Total
Episodes of care	4582	4181	4489	4460	4703	4495	4594	4706	36210
Patient days	36146	30786	30632	29975	30500	29025	29953	28823	245840
Length of stay	7.89	7.36	6.82	6.72	6.49	6.46	6.52	6.12	6.79
Deaths*	67	76	73	68	58	50	58	62	512
Death %	1.46%	1.82%	1.63%	1.52%	1.23%	1.11%	1.26%	1.32%	1.41%

*Episodes ending with death

Figure 1: Land transport episodes of care and length of stay in Qld public acute hospitals across all ages over time (2009/10-2016/17)



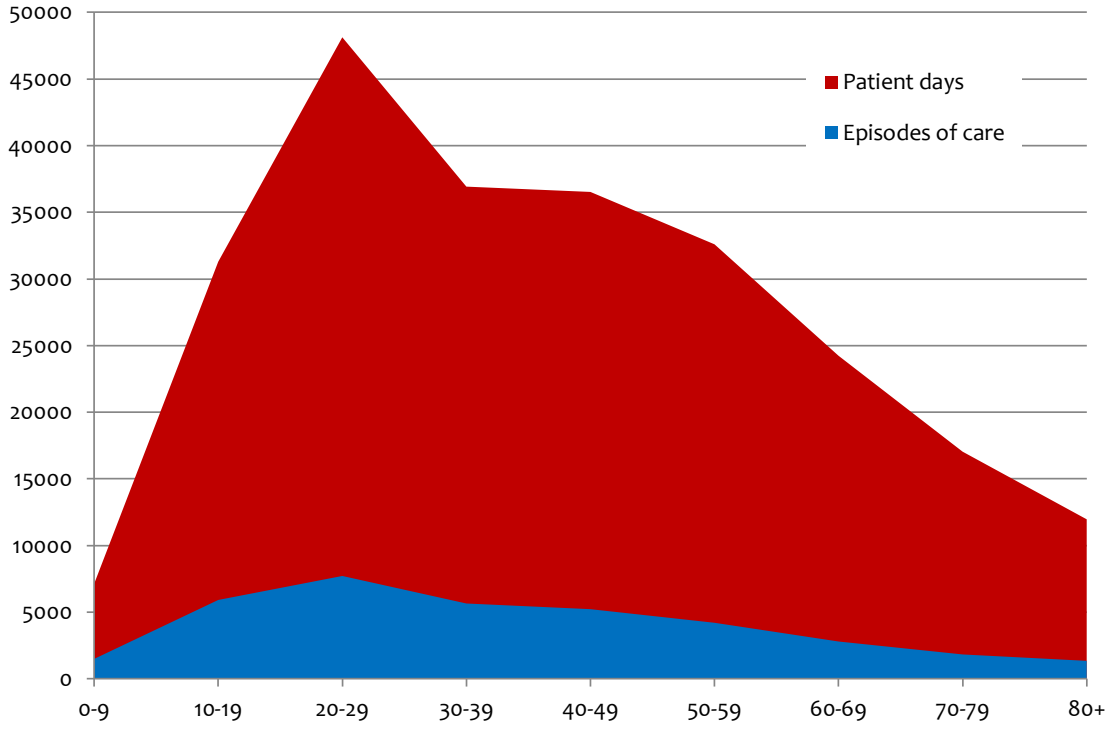
Examining land transport episodes by age groups, patients aged in the 20-29 year age group account for over one-fifth of the episodes of care, and the combined age group of 10-39 years accounts for over half of the episodes of care and just under half of the patient days (as shown in Table 2 and Figure 2). The average acute care length of stay gradually increases over age groups ranging from under 5 days for those aged under 10 years to approximately 9 days in those aged over 60 years.

Table 2: Land transport episodes by age groups in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Episodes of care	1497	5919	7719	5654	5228	4207	2802	1832	1352	36210
Patient days	7137	31291	48125	36923	36525	32596	24234	17041	11968	245840
Length of stay	4.77	5.29	6.23	6.53	6.99	7.75	8.65	9.30	8.85	6.79
Deaths*	28	60	92	49	52	47	50	49	85	512
Death %	1.87%	1.01%	1.19%	0.87%	0.99%	1.12%	1.78%	2.67%	6.29%	1.41%

*Episodes ending with death

Figure 2: Eight year total land transport episodes and patient days in Qld public acute hospitals by age group (2009/10-2016/17)



Breaking these findings down further by gender, males accounted for 74% of the episodes of care and 73% of the patient days (See Table 3 and Figure 3 and 4).

Table 3: Male and female land transport episodes over time in Qld public acute hospitals (2009/10- 2016/17)

Males	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Episodes of care	991	4686	6107	4472	4119	3059	1850	1010	642	26936
Patient days	4070	24433	38224	28919	28339	24156	16466	9595	5998	180200
Length of stay	4.11	5.21	6.26	6.47	6.88	7.90	8.90	9.50	9.34	6.69
*Death %	1.51%	0.92%	1.08%	0.87%	1.07%	0.95%	2.05%	3.76%	8.26%	1.36%
Females	**0-9**	**10-19**	**20-29**	**30-39**	**40-49**	**50-59**	**60-69**	**70-79**	**80+**	**Total**
Episodes of care	506	1233	1612	1182	1109	1148	952	822	710	9274
Patient days	3067	6858	9901	8004	8186	8440	7768	7446	5970	65640
Length of stay	6.06	5.56	6.14	6.77	7.38	7.35	8.16	9.06	8.41	7.08
*Death %	2.57%	1.38%	1.61%	0.85%	0.72%	1.57%	1.26%	1.34%	4.51%	1.59%

*Percentage of episodes ending with death

Figure 3: Eight year total land transport episodes and patient days in Qld public acute hospitals by age group - Males (2009/10-2016/17)

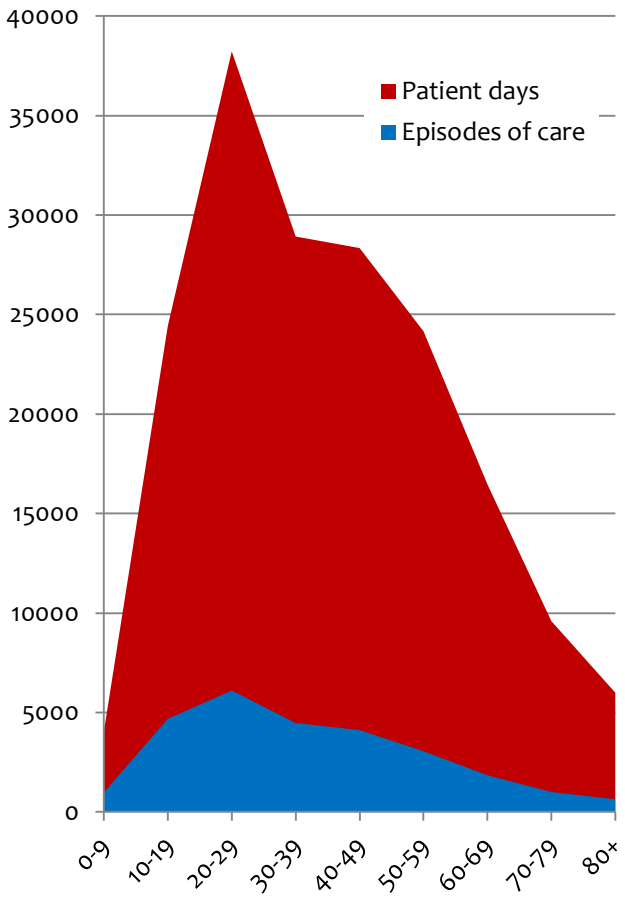
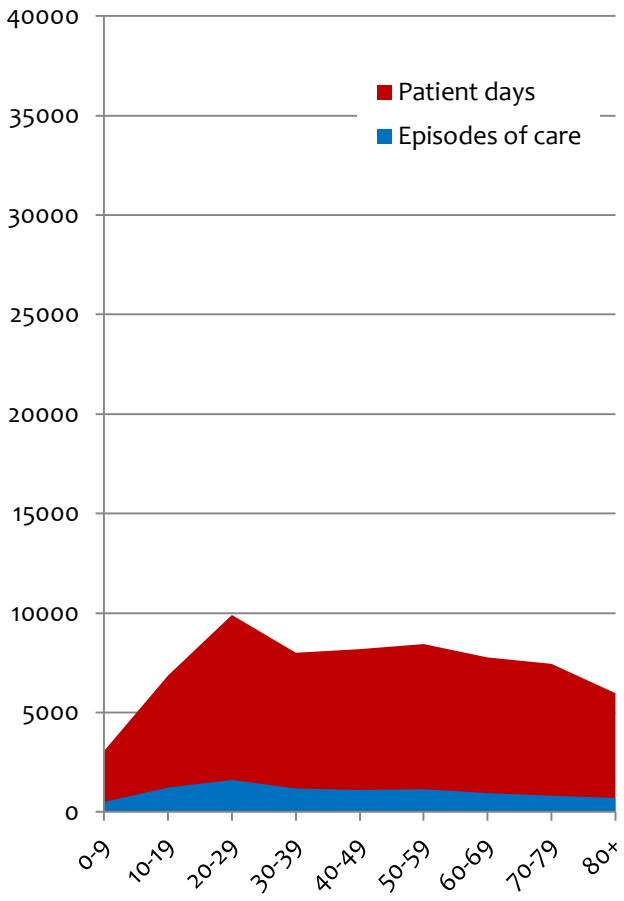


Figure 4: Eight year total land transport episodes and patient days in Qld public acute hospitals by age group - Females (2009/10-2016/17)



INJURY DIAGNOSES AND CAUSES OF INJURY – ALL AGES

The most common principal injury diagnoses over the eight year period were lower leg fractures (accounting for 4735 episodes of care), rib/sternum/thoracic fractures (3357 episodes of care) and intracranial injuries (3140 episodes of care, which accounted for the longest average acute care length of stay at almost 13 days) (See Table 4). This differed across males and females with the most common principal diagnosis for males being lower leg fractures, while for females the two most common were rib/sternum/thoracic fractures and lower leg fractures (See Table 5).

Table 4: Top 10 principal injury diagnoses for land transport episodes in Qld public acute hospitals over eight year period (2009/10-2016/17)

Principal diagnosis	8 Year Total	Avg LOS
S82-Fracture of lower leg, including ankle	4735	7.72
S22-Fracture of rib(s), sternum and thoracic spine	3357	6.17
S06-Intracranial injury	3140	12.69
S52-Fracture of forearm	2919	3.29
S42-Fracture of shoulder and upper arm	2453	3.88
S32-Fracture of lumbar spine and pelvis	2212	9.91
S72-Fracture of femur	1836	9.50
S27-Injury of other and unspecified intrathoracic organs	1484	7.48
S36-Injury of intra-abdominal organs	1337	8.72
S02-Fracture of skull and facial bones	1304	5.13

Table 5: Male and female top 10 principal land transport diagnoses for land transport episodes in Qld public acute hospitals over eight year period (2009/10-2016/17)

Principal diagnosis - Males	8 Year Total	Avg LOS
S82-Fracture of lower leg, including ankle	3742	7.50
S22-Fracture of rib(s), sternum and thoracic spine	2358	6.07
S06-Intracranial injury	2306	13.30
S52-Fracture of forearm	2184	3.13
S42-Fracture of shoulder and upper arm	1944	3.70
S32-Fracture of lumbar spine and pelvis	1485	10.33
S72-Fracture of femur	1420	9.13
S27-Injury of other and unspecified intrathoracic organs	1223	7.19
S02-Fracture of skull and facial bones	977	5.06
S36-Injury of intra-abdominal organs	936	8.20
Principal diagnosis - Females	**8 Year Total**	**Avg LOS**
S22-Fracture of rib(s), sternum and thoracic spine	999	6.40
S82-Fracture of lower leg, including ankle	993	8.54
S06-Intracranial injury	834	11.01
S52-Fracture of forearm	735	3.78
S32-Fracture of lumbar spine and pelvis	727	9.07
S42-Fracture of shoulder and upper arm	509	4.59
S72-Fracture of femur	416	10.77
S36-Injury of intra-abdominal organs	401	9.95
S12-Fracture of neck	343	9.36
S02-Fracture of skull and facial bones	327	5.32

The main external causes of land transport episodes over the eight year period were noncollision motorcycle crashes (accounting for 7331 episodes of care), car occupants injured through collisions with other cars/pickup trucks/vans (4095 episodes of care), and noncollision pedal cycle crashes (3647 episodes of care) (See Table 6). The top causes differed between males and females with noncollision motorcycle crashes the most common cause for males and car occupants injured through collisions with other cars/pickup trucks/vans for females (See Table 7).

Table 6: Top 10 external causes of land transport injury in Qld public acute hospitals over eight year period (2009/10-2016/17)

Main external cause	8 Year Total	Avg LOS
Motorcycle rider injured in noncollision transport accident	7331	4.95
Car occupant injured in collision with car, pick-up truck or van	4095	7.84
Pedal cyclist injured in noncollision transport accident	3647	3.55
Car occupant injured in noncollision transport accident	3491	7.87
Car occupant injured in collision with fixed or stationary object	3021	8.73
Pedestrian injured in collision with car, pick-up truck or van	2320	9.55
Motorcycle rider injured in collision with car, pick-up truck or van	2096	10.26
Motorcycle rider injured in collision with fixed or stationary object	1796	7.22
Motorcycle rider injured in other and unspecified transport accidents	1679	4.58
Pedal cyclist injured in collision with car, pick-up truck or van	856	6.76

Table 7: Male and female top 10 external causes of land transport injury in Qld public acute hospitals over eight year period (2009/10-2016/17)

Main external cause - Males	8 Year Total	Avg LOS
Motorcycle rider injured in noncollision transport accident	6647	4.95
Pedal cyclist injured in noncollision transport accident	2960	3.64
Car occupant injured in noncollision transport accident	2130	8.13
Car occupant injured in collision with car, pick-up truck or van	1905	8.26
Motorcycle rider injured in collision with car, pick-up truck or van	1885	10.33
Car occupant injured in collision with fixed or stationary object	1867	9.12
Motorcycle rider injured in collision with fixed or stationary object	1605	7.35
Motorcycle rider injured in other and unspecified transport accidents	1522	4.61
Pedestrian injured in collision with car, pick-up truck or van	1389	9.54
Pedal cyclist injured in collision with car, pick-up truck or van	704	7.04
Main external cause - Females	**8 Year Total**	**Avg LOS**
Car occupant injured in collision with car, pick-up truck or van	2190	7.48
Car occupant injured in noncollision transport accident	1361	7.47
Car occupant injured in collision with fixed or stationary object	1154	8.08
Pedestrian injured in collision with car, pick-up truck or van	931	9.57
Pedal cyclist injured in noncollision transport accident	687	3.16
Motorcycle rider injured in noncollision transport accident	684	4.94
Car occupant injured in other and unspecified transport accidents	273	6.45
Car occupant injured in collision with heavy transport vehicle or bus	245	9.58
Motorcycle rider injured in collision with car, pick-up truck or van	211	9.61
Pedal cyclist injured in other and unspecified transport accidents	198	3.28

ROAD USER GROUP AND COUNTERPART CHARACTERISTICS

Motorcyclists were the most frequent road user group with an injury episode of care followed by car occupants (See Figure 5), however the road user groups accounting for the longest average acute care length of stay in hospital were pedestrians and other road user groups (mainly occupants of pickup trucks/vans and heavy vehicle occupants) (with average lengths of stay between 8-9 days) (See Figure 6).

Figure 5: Number of land transport hospitalisation episodes by road users in in Qld public acute hospitals (2009/10-2016/17)

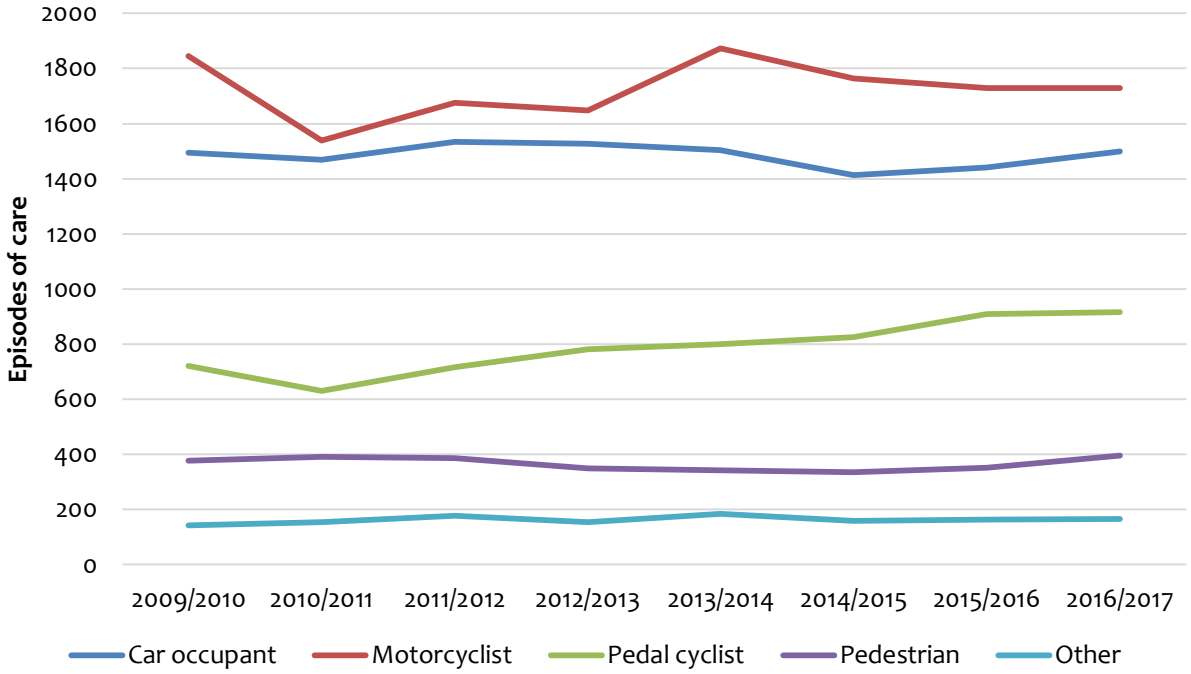
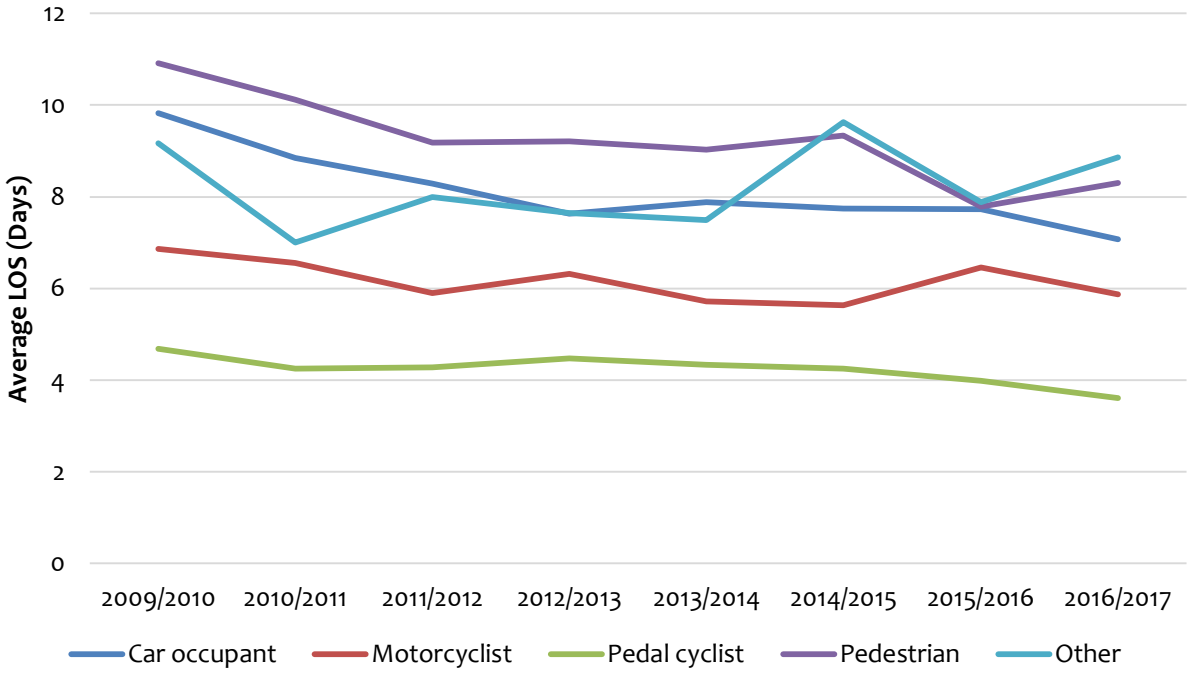


Figure 6: Average length of stay of land transport hospitalisation episodes by road users in in Qld public acute hospitals (2009/10-2016/17)



Examining the counterparts by road user groups, non-collision events were most common for the motorcyclist group but these accounted for a slightly smaller proportion of total patient days. Furthermore as seen in Figure 7 and Figure 8, while motorcyclists account for the largest number of episodes of care, car occupants account for the largest number of patient days. Similarly, while pedal cyclists account for more than twice the number of episodes of care to pedestrians, pedestrians account for almost the same number of patient days to pedal cyclists.

Figure 7: Episodes of care by road user and counterpart in Qld public acute hospitals (2009/10-2016/17)

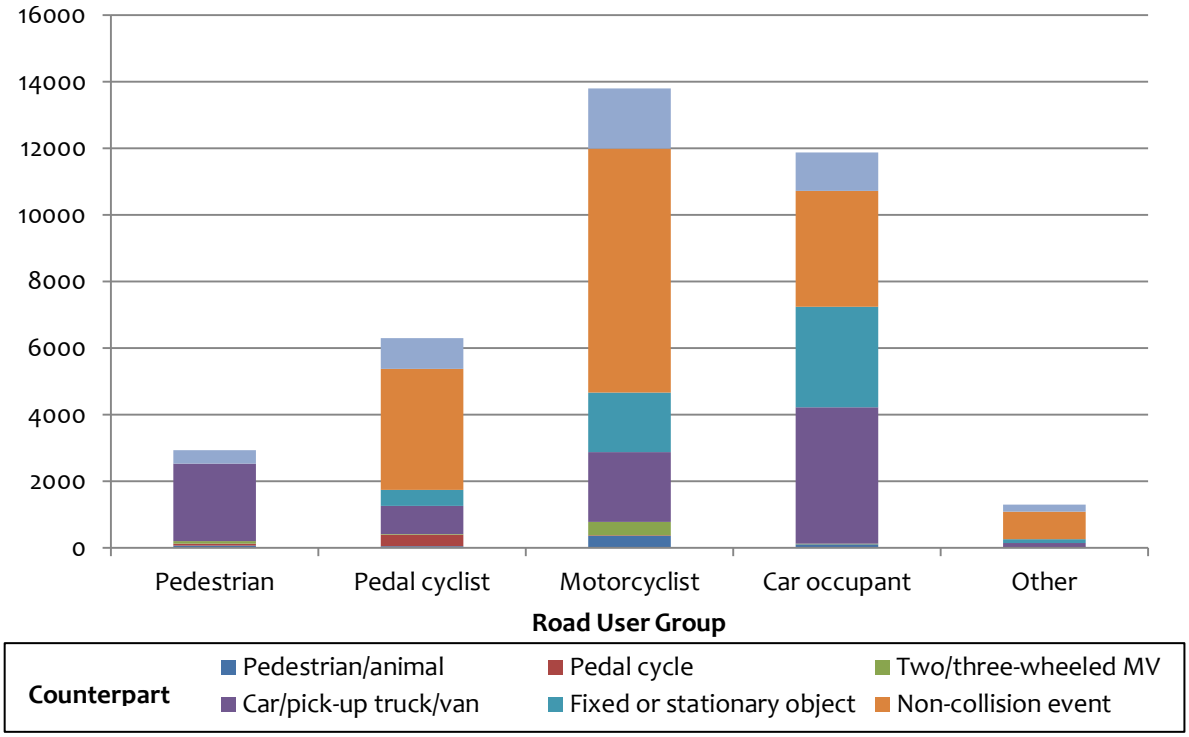
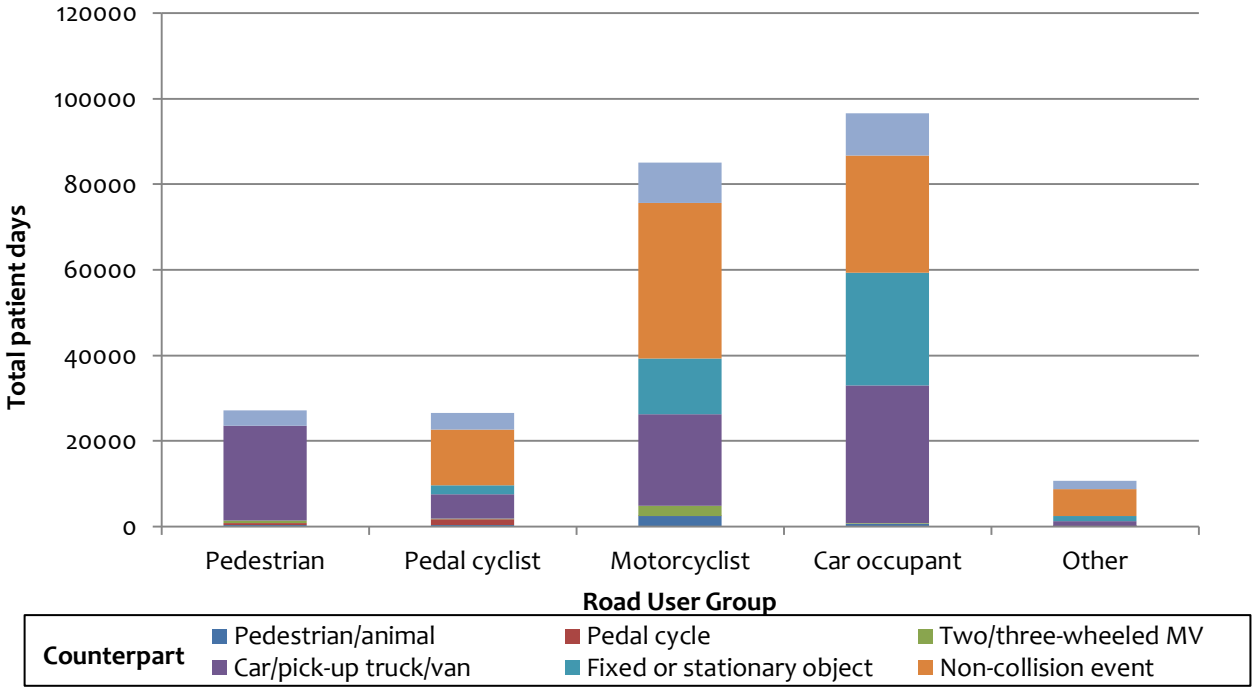
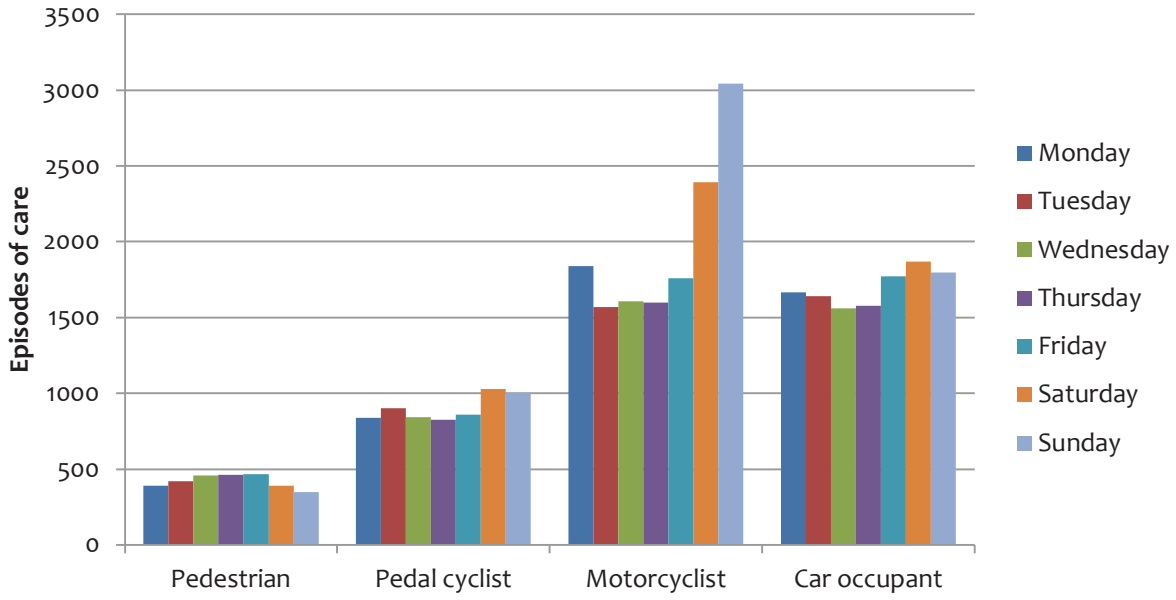


Figure 8: Total patient days by road user and counterpart in Qld public acute hospitals (2009/10-2016/17)



The admission day for pedestrians, pedal cyclists and car occupants varied only slightly across weekdays/weekends with the most common day of admission for pedestrians being Friday, and for pedal cyclists/car occupants being Saturday. There was a large difference for the admission days for motorcyclists however, with 22% of admissions occurring on a Sunday (almost double the amount presenting on a Tuesday, Wednesday or Thursday) (See Figure 9).

Figure 9: Admission day by road user group days in Qld public acute hospitals by age group (2009/10-2016/17)



MOTORCYCLIST INJURY-RELATED EPISODES OF CARE

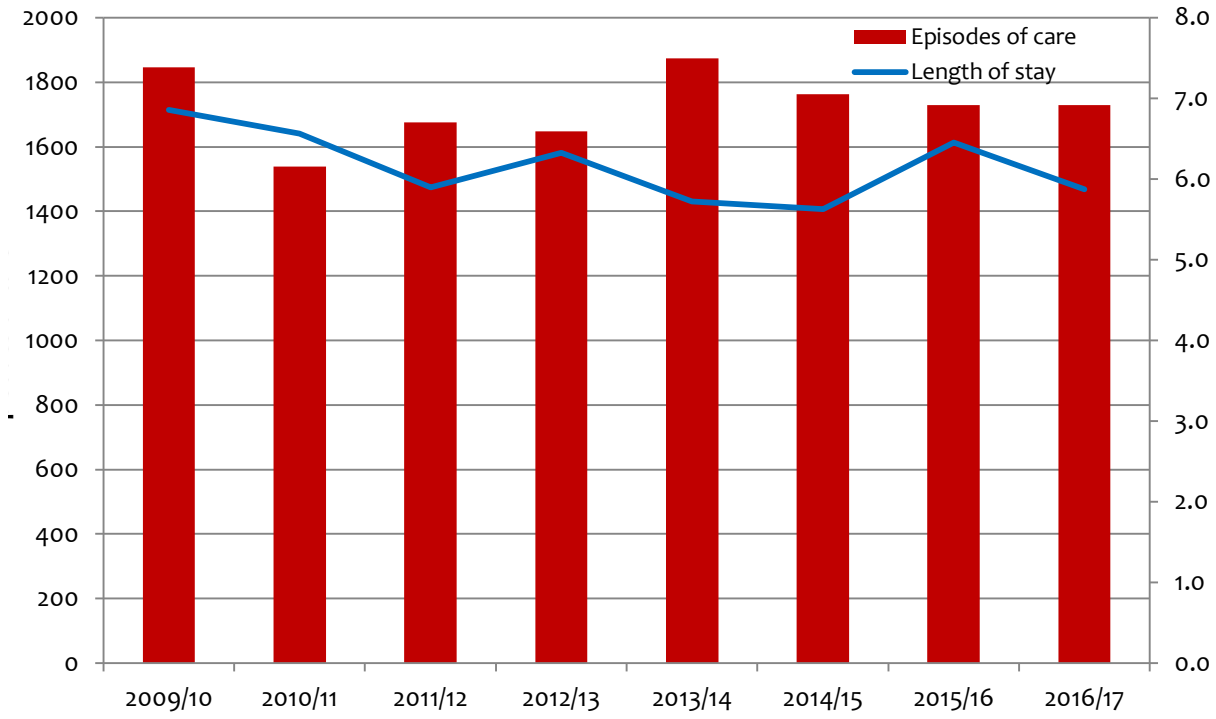
Over the last eight years, motorcyclist injuries have accounted for 13804 episodes of care in Queensland public acute hospitals, resulting in 85013 patient days, with an average acute care length of stay of 6 days (See Table 8 and Figure 10). The average acute care length of stay fluctuated over the years from a high of almost 7 days in 2009/10 to a low of 5.6 days in 2014/15, though non consistent trend is evident. There were 100 motorcyclist injury episodes that ended with death in Queensland public acute hospitals.

Table 8: Motorcyclist episodes over time in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	Total
Episodes of care	1846	1538	1675	1648	1874	1763	1730	1730	13804
Patient days	12663	10088	9882	10421	10721	9921	11163	10154	85013
Length of stay	6.86	6.56	5.90	6.32	5.72	5.63	6.45	5.87	6.16
Deaths*	0.49%	1.04%	0.90%	0.97%	0.48%	0.57%	0.75%	0.69%	0.72%

*Percentage of episodes ending with death

Figure 10: Motorcyclist episodes of care and length of stay in Qld public acute hospitals across all ages over time (2009/10-2016/17)



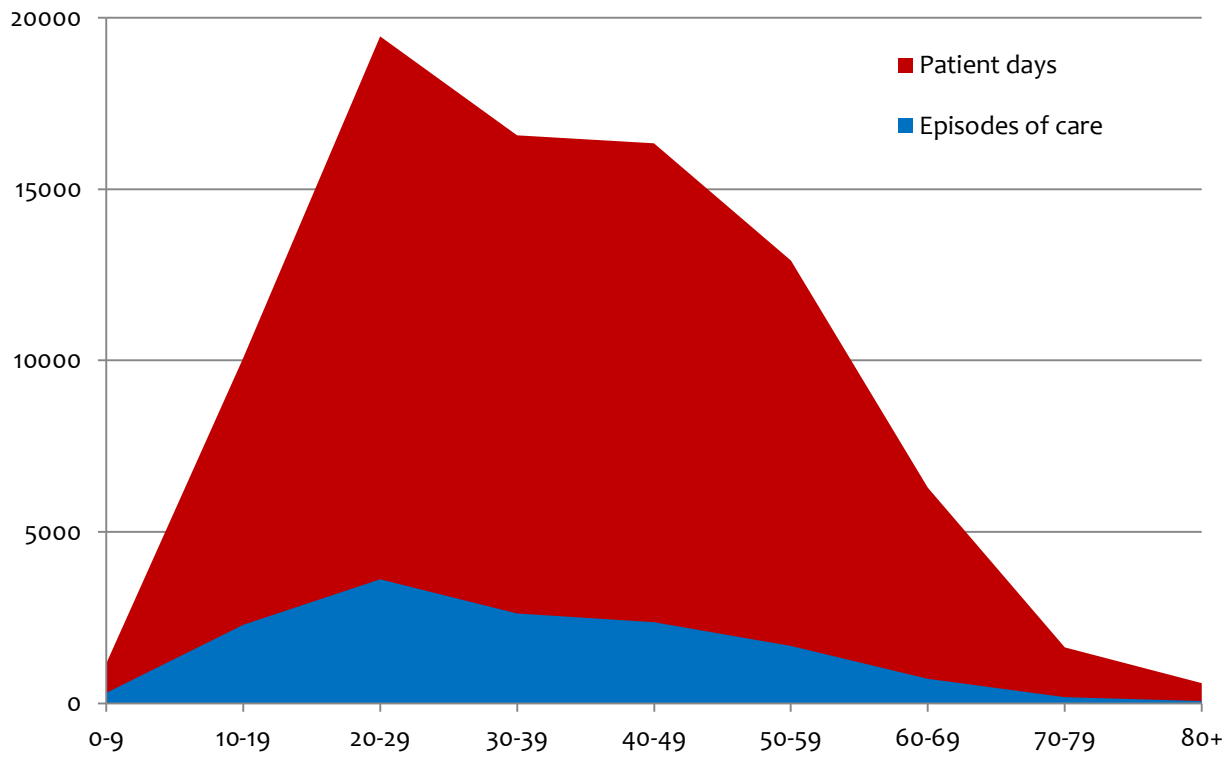
Examining motorcyclist injury episodes by age groups, the most common age groups were 20-29 years of age, followed by 30-39 years of age, together accounting for 45% of episodes of care (See Table 9 and Figure 11).

Table 9: Motor cyclist episodes by age groups in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Episodes of care	302	2287	3615	2618	2363	1670	711	176	62	13804
Patient days	1161	10073	19457	16570	16337	12916	6286	1628	585	85013
Length of stay	3.84	4.40	5.38	6.33	6.91	7.73	8.84	9.25	9.44	6.16
*Death %	0.33%	0.44%	0.75%	0.69%	0.97%	0.48%	0.84%	2.27%	4.84%	0.72%

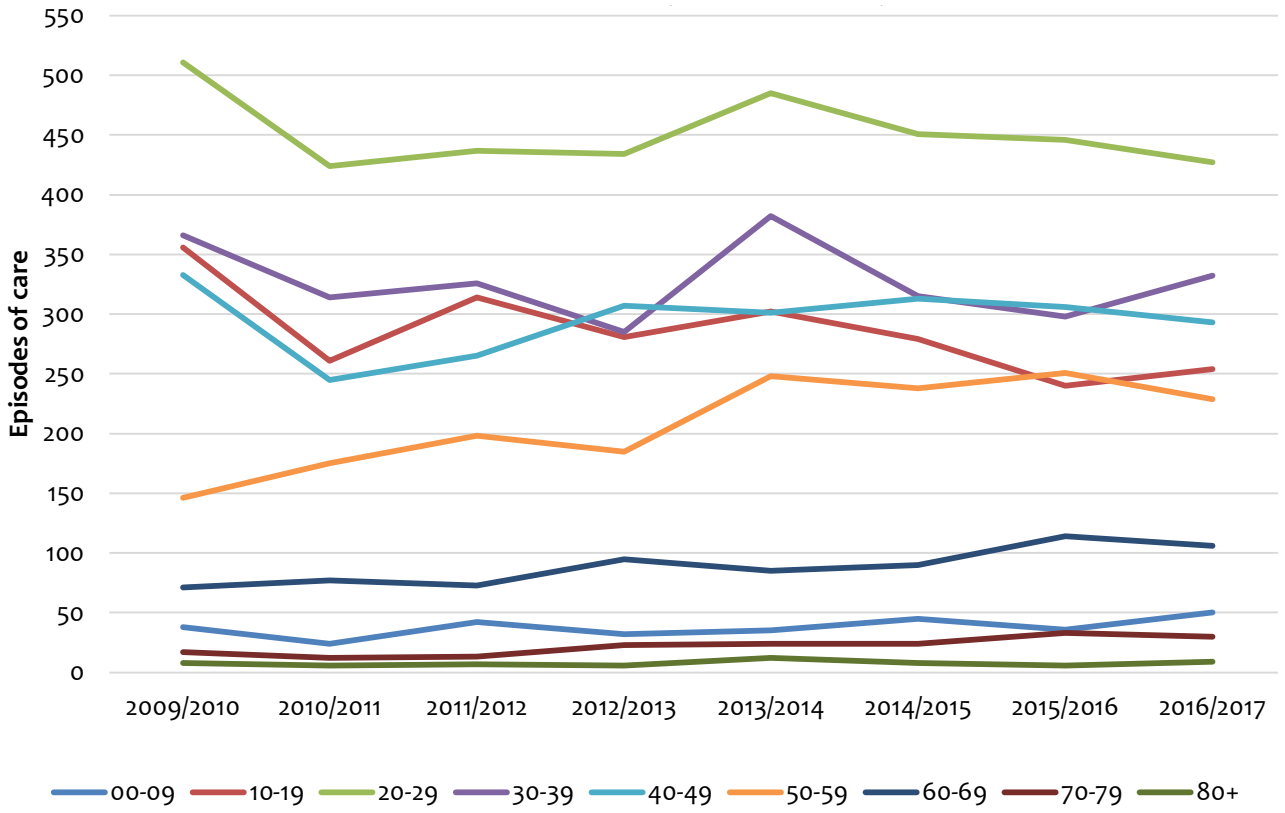
*Episodes ending with death

Figure 11: Eight year total motorcyclist episodes of care and patient days in Qld public acute hospitals by age group (2009/10-2016/17)



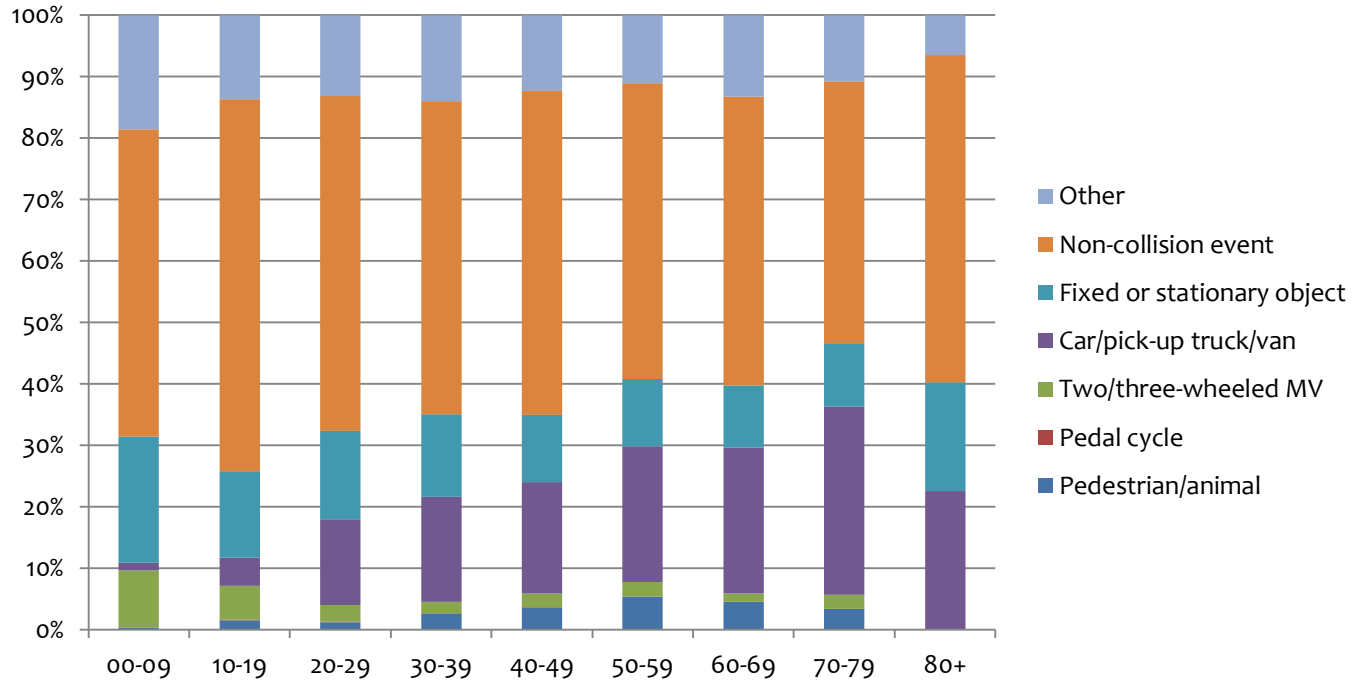
There was an increase in motorcyclist injury episodes over time for some age groups especially for those aged between 50-79 years with 1.6 times as many episodes of care for this age range in 2016/17 compared to 2009/10 (See Figure 12).

Figure 12: Motorcyclist episodes of care by age group in Qld public acute hospitals over time (2009/10-2016/17)



Examining counterparts for motorcyclist injury episodes for age groups, it can be seen that collisions with cars/pickup trucks/vans gradually increase across age groups, while collisions with fixed/stationary objects decreases slightly across age groups. Non-collision events fluctuate across age groups accounting for around half of motorcyclist events (with a low of 43% in 70-79 year olds and a high of 61% in 10-19 year olds) (See Figure 13).

Figure 13: Counterpart by age group for motorcyclist episodes of care in Qld public acute hospitals over time (2009/10-2016-17)



The most common principal injury diagnoses for motorcycle injury episodes over the eight year period were lower leg fractures (accounting for 2641 episodes of care), and forearm and shoulder/upper arm fractures (together accounting for 2523 episodes) (See Table 10).

Table 10: Top 10 principal injury diagnoses for motorcyclist injury episodes in Qld public acute hospitals over eight year period (2009/10-2016/17)

Principal diagnosis	8 Year Total	Avg LOS
Fracture of lower leg, including ankle	2641	7.20
Fracture of forearm	1338	3.02
Fracture of shoulder and upper arm	1185	3.42
Fracture of rib(s), sternum and thoracic spine	1019	6.02
Intracranial injury	745	11.89
Fracture of femur	743	8.97
Fracture of lumbar spine and pelvis	620	10.56
Injury of other and unspecified intrathoracic organs	597	6.49
Open wound of lower leg	528	4.15
Fracture of foot, except ankle	502	5.37

CAR OCCUPANT INJURY-RELATED EPISODES OF CARE

Over the last eight years, car occupant injuries have accounted for 11880 episodes of care in Queensland public acute hospitals, resulting in 96587 patient days, with an average acute care length of stay of 8 days (See Table 11 and Figure 14). The average acute care length of stay has reduced over time from almost 10 days in 2009/10 to 7 days in 2016/17. There were 259 car occupant injury episodes that ended with death in Queensland public acute hospitals.

Table 11: Car occupant episodes over time in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	Total
Episodes of care	1495	1468	1535	1526	1504	1413	1440	1499	11880
Patient days	14683	12989	12726	11653	11854	10936	11138	10608	96587
Length of stay	9.82	8.85	8.29	7.64	7.88	7.74	7.73	7.08	8.13
*Death %	2.34%	2.79%	2.48%	2.23%	2.13%	1.84%	2.01%	1.60%	2.18%

*Percentage of episodes ending with death

Figure 14: Car occupant episodes of care and length of stay in Qld public acute hospitals across all ages over time (2009/10-2016/17)

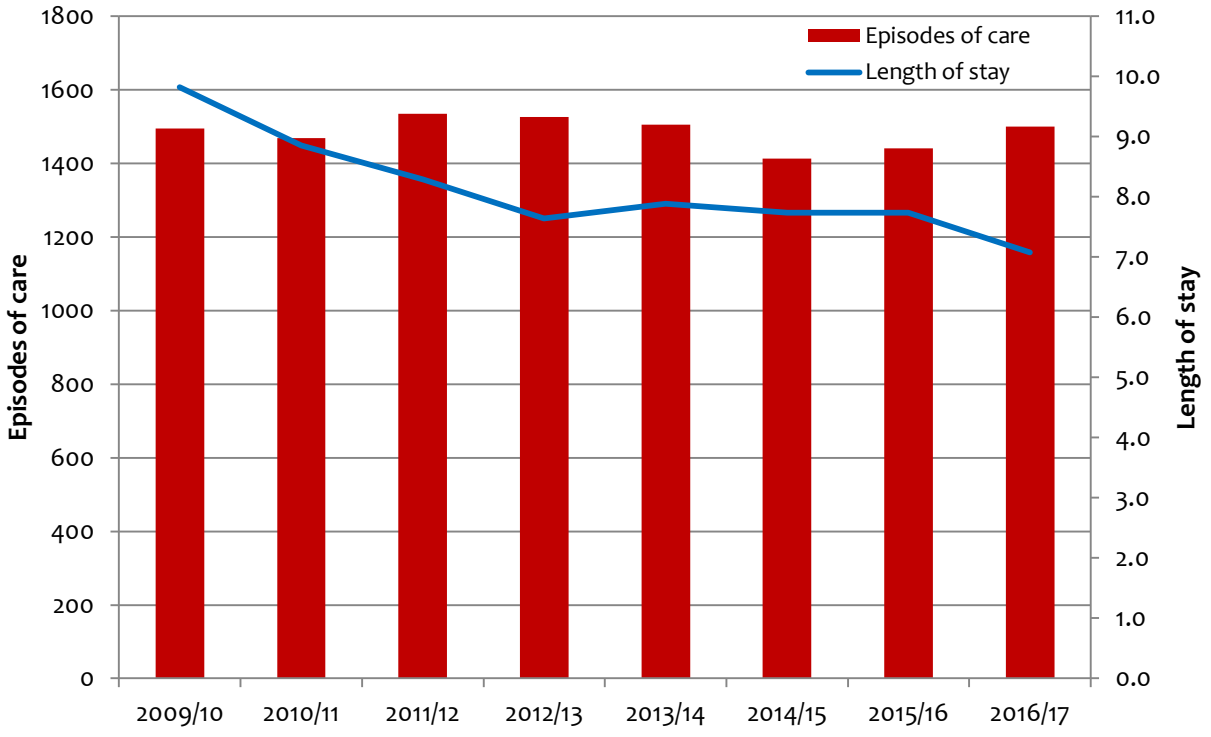
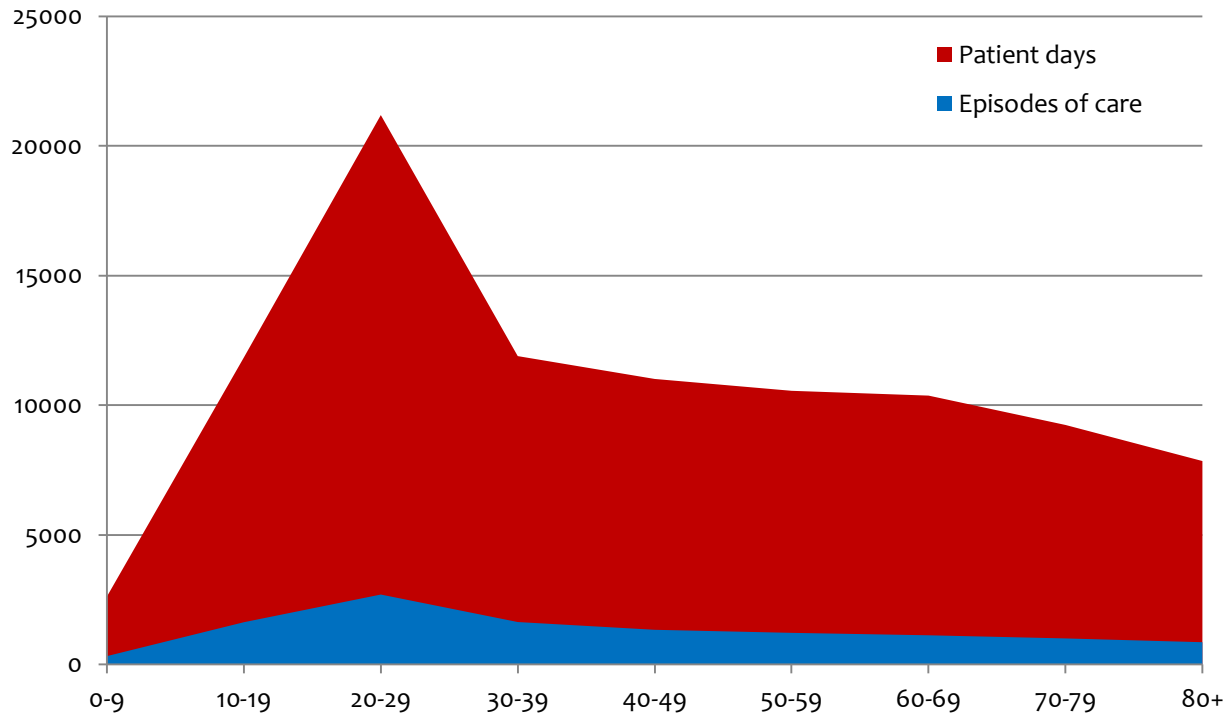


Table 12: Car occupant episodes by age groups in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Episodes of care	328	1635	2702	1642	1343	1225	1131	1010	864	11880
Patient days	2628	11844	21188	11895	11014	10557	10372	9240	7849	96587
Length of stay	8.01	7.24	7.84	7.24	8.20	8.62	9.17	9.15	9.08	8.13
*Death %	4.27%	2.20%	1.74%	1.52%	1.04%	1.80%	1.68%	2.67%	6.37%	2.18%

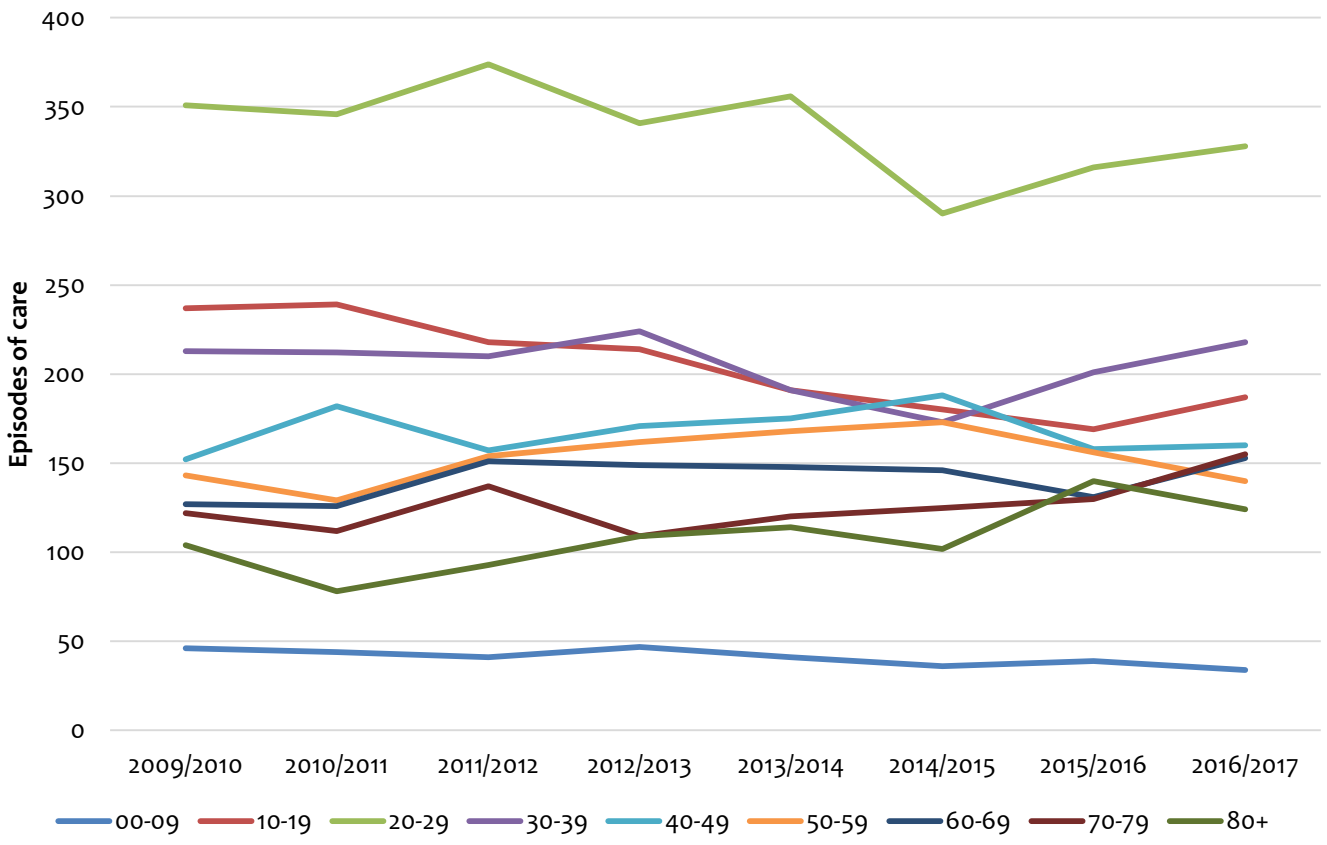
*Percentage of episodes ending with death

Figure 15: Eight year total car occupant episodes of care and patient days in Qld public acute hospitals by age group (2009/10-2016/17)



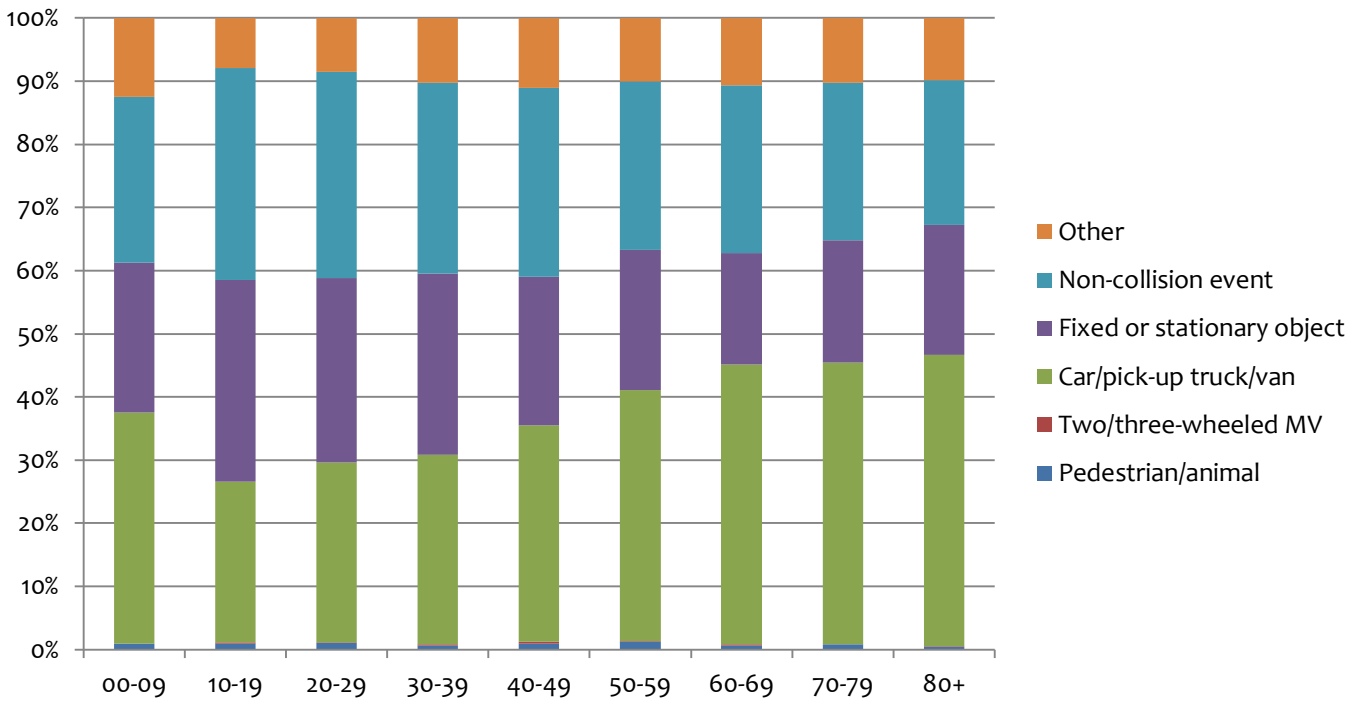
There appeared to be some reductions in car occupant injury episodes over time for the 10-19 year age group, though other age groups did not show consistent trends over time (See Figure 16).

Figure 16: Car occupant episodes of care by age group in Qld public acute hospitals over time (2009/10-2016/17)



Examining counterparts for car occupant injury episodes for age groups, it can be seen that collisions with cars/pickup trucks/vans gradually increase across age groups ten years and over, while collisions with fixed/stationary objects and non-collision events decreases across age groups ten years and over (See Figure 17).

Figure 17: Counterpart by age group for car occupant episodes of care in Qld public acute hospitals over time (2009/10-2016-17)



The most common principal injury diagnoses over the eight year period were fractures of the rib/sternum/thorax (accounting for 1695 episodes of care), followed by intracranial injury (accounting for 1331 episodes of care with an average acute care length of stay of almost 14 days) (See Table 13).

Table 13: Top 10 principal injury diagnoses for car occupant injury episodes in Qld public acute hospitals over eight year period (2009/10-2016/17)

Principal diagnosis	8 Year Total	Avg LOS
Fracture of rib(s), sternum and thoracic spine	1695	6.33
Intracranial injury	1331	13.86
Fracture of lumbar spine and pelvis	955	9.68
Fracture of lower leg, including ankle	746	10.33
Fracture of neck	681	8.55
Injury of intra-abdominal organs	586	9.55
Injury of other and unspecified intrathoracic organs	504	9.29
Fracture of femur	473	12.40
Fracture of forearm	469	6.17
Fracture of skull and facial bones	459	6.67

PEDAL CYCLIST INJURY-RELATED EPISODES OF CARE

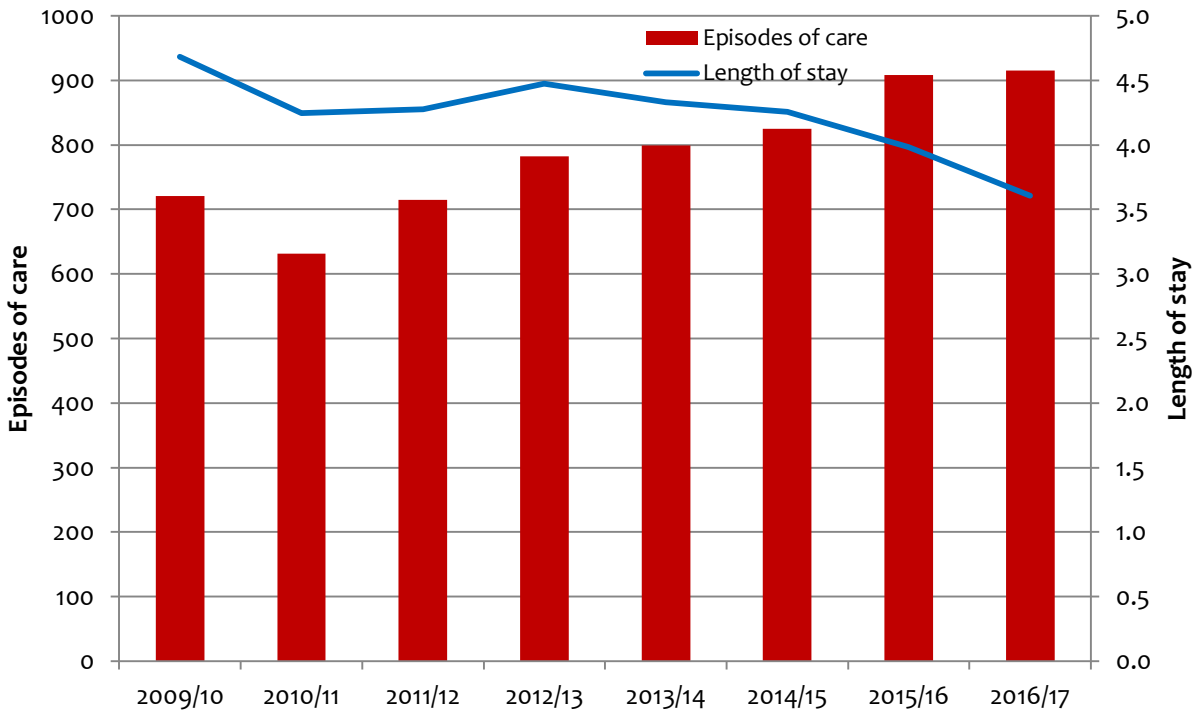
Over the last eight years, pedal cyclist injuries have accounted for 6296 episodes of care in Queensland public acute hospitals, resulting in 26495 patient days, with an average acute care length of stay of just over 4 days (See Table 14 and Figure 18). The average acute care length of stay has reduced slightly over time from just under 5 days in 2009/10 to just under 4 days in 2016/17. There were 33 pedal cyclist injury episodes that ended with death in Queensland public acute hospitals.

Table 14: Pedal cyclist injuries over time in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	Total
Episodes of care	721	631	715	782	799	825	908	915	6296
Patient days	3375	2679	3057	3500	3458	3510	3617	3299	26495
Length of stay	4.68	4.25	4.28	4.48	4.33	4.25	3.98	3.61	4.21
*Death %	0.97%	0.32%	0.84%	0.38%	0.50%	0.36%	0.44%	0.44%	0.52%

*Percentage of episodes ending with death

Figure 18: Pedal cyclist episodes of care and length of stay in Qld public acute hospitals across all ages over time (2009/10-2016/17)



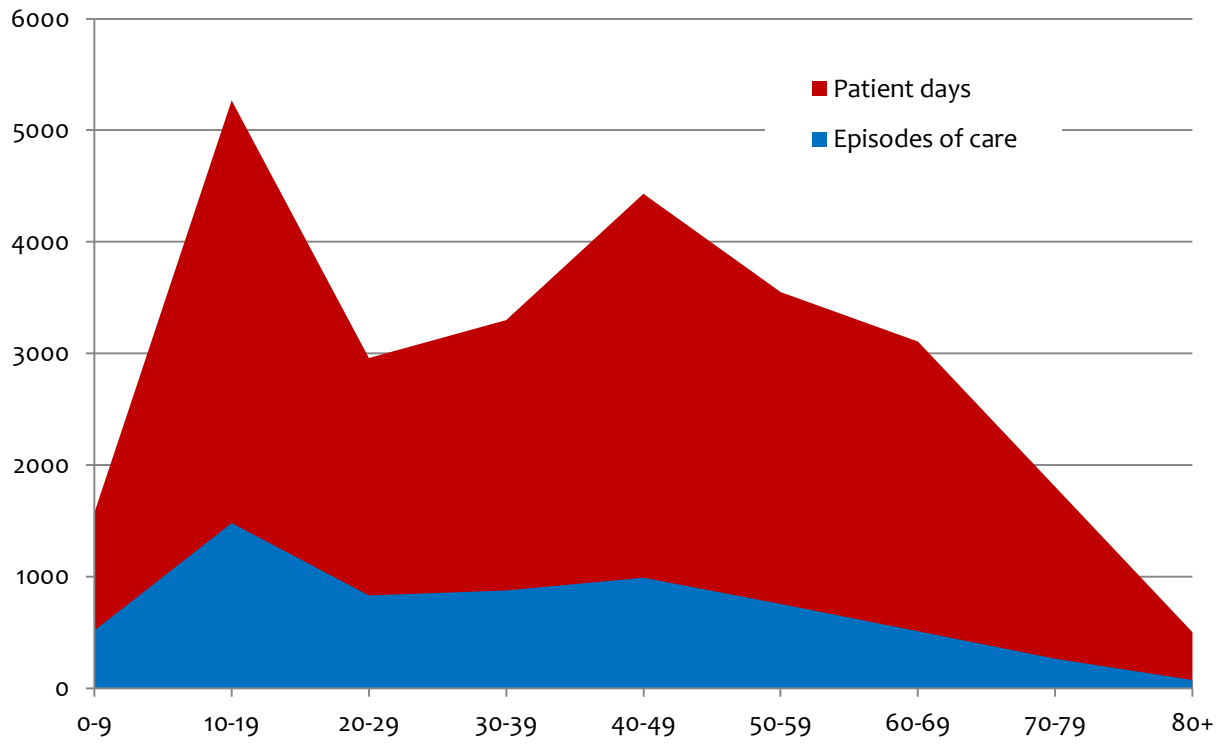
Examining pedal cyclist injury-related episodes by age groups, the most common age groups were 10-19 years of age, followed by 40-49 years of age (See Table 15 and Figure 19).

Table 15: Pedal cyclist episodes by age groups in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Episodes of care	517	1480	831	876	990	755	510	264	73	6296
Patient days	1574	5268	2959	3299	4431	3550	3107	1805	502	26495
Length of stay	3.04	3.56	3.56	3.77	4.48	4.70	6.09	6.84	6.88	4.21
*Death %	0.19%	0.20%	0.48%	0.00%	0.40%	0.79%	1.96%	1.52%	1.37%	0.52%

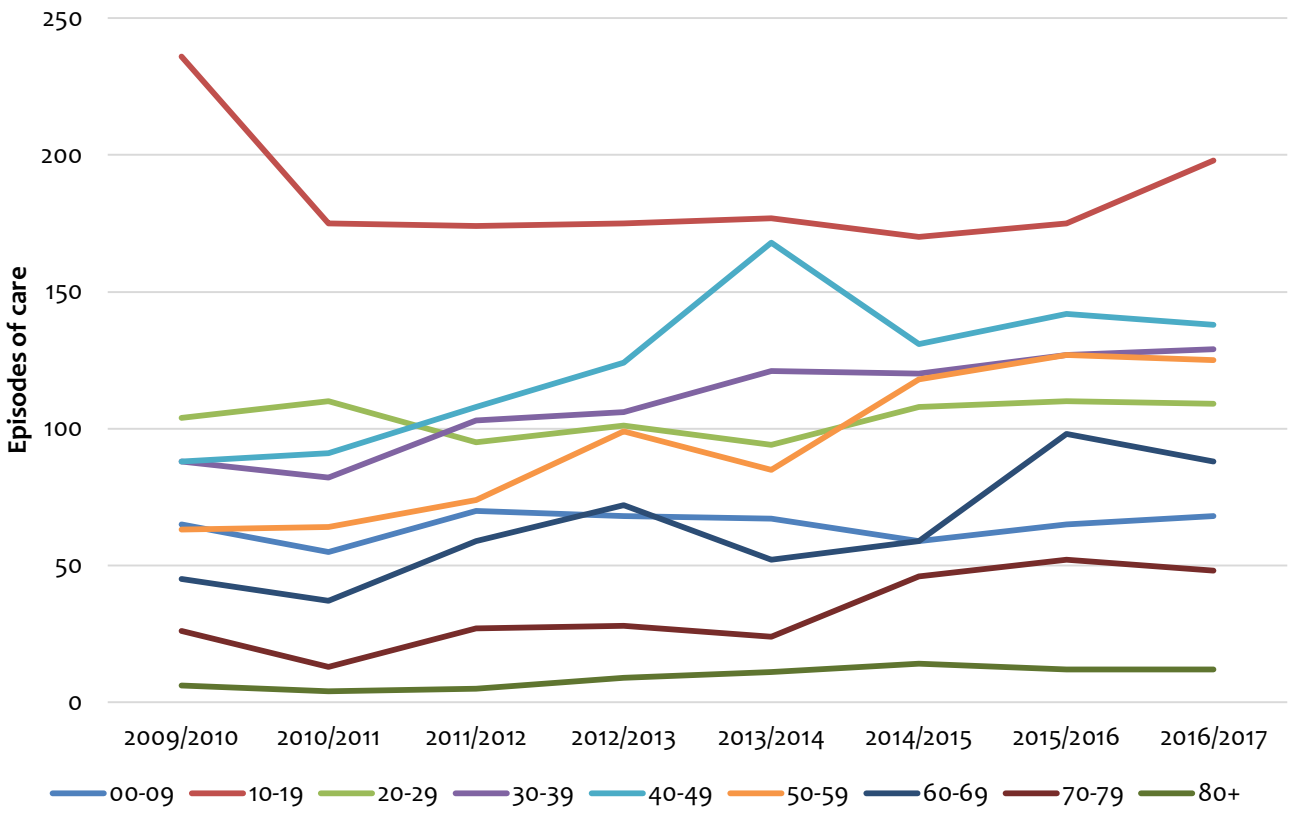
*Percentage of episodes ending with death

Figure 19: Eight year total pedal cyclist episodes of care and patient days in Qld public acute hospitals by age group (2009/10-2016/17)



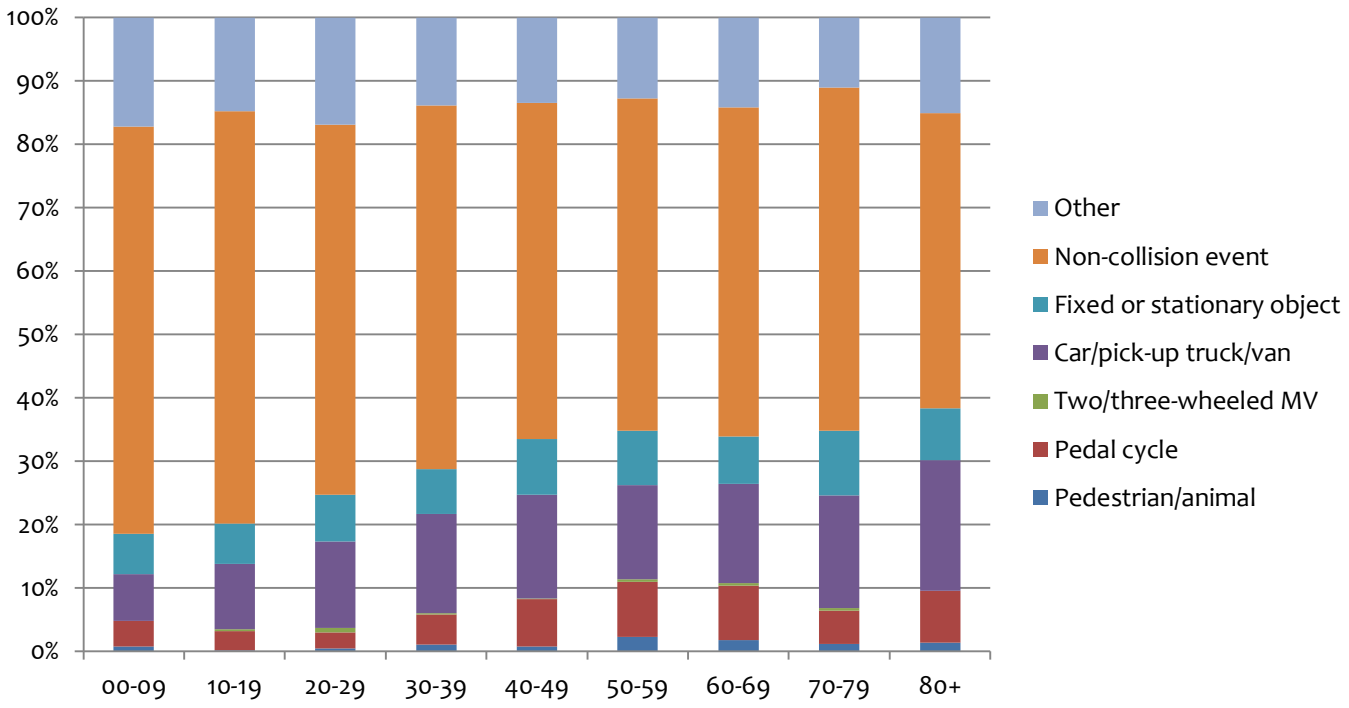
There was an increase in pedal cyclist episodes over time for some age groups especially for the age groups over 50 years which almost doubled in numbers of episodes over time (See Figure 20).

Figure 20: Pedal cyclist episodes of care by age group in Qld public acute hospitals over time (2009/10-2016/17)



Examining counterparts for pedal cyclist injury episodes for age groups, it can be seen that collisions with cars/pickup trucks/vans and with other pedal cyclists gradually increases across age groups, while non-collision events gradually decrease across age groups (See Figure 21).

Figure 21: Counterpart by age group for pedal cyclist episodes of care in Qld public acute hospitals over time (2009/10-2016-17)



The most common principal injury diagnoses over the eight year period were fractures of the forearm and shoulder/upper arm (together accounting for 1622 episodes of care), followed by lower leg fractures (accounting for 643 episodes) (See Table 16).

Table 16: Top 10 principal injury diagnoses for pedal cyclist injury episodes in Qld public acute hospitals over eight year period (2009/10-2016/17)

Principal diagnosis	8 Year Total	Avg LOS
Fracture of forearm	945	2.01
Fracture of shoulder and upper arm	677	2.72
Fracture of lower leg, including ankle	643	4.45
Intracranial injury	489	8.84
Fracture of rib(s), sternum and thoracic spine	397	4.84
Fracture of skull and facial bones	360	3.11
Fracture of femur	352	6.21
Fracture of lumbar spine and pelvis	285	7.28
Injury of other and unspecified intrathoracic organs	252	5.14
Injury of intra-abdominal organs	214	6.90

PEDESTRIAN INJURY-RELATED EPISODES OF CARE

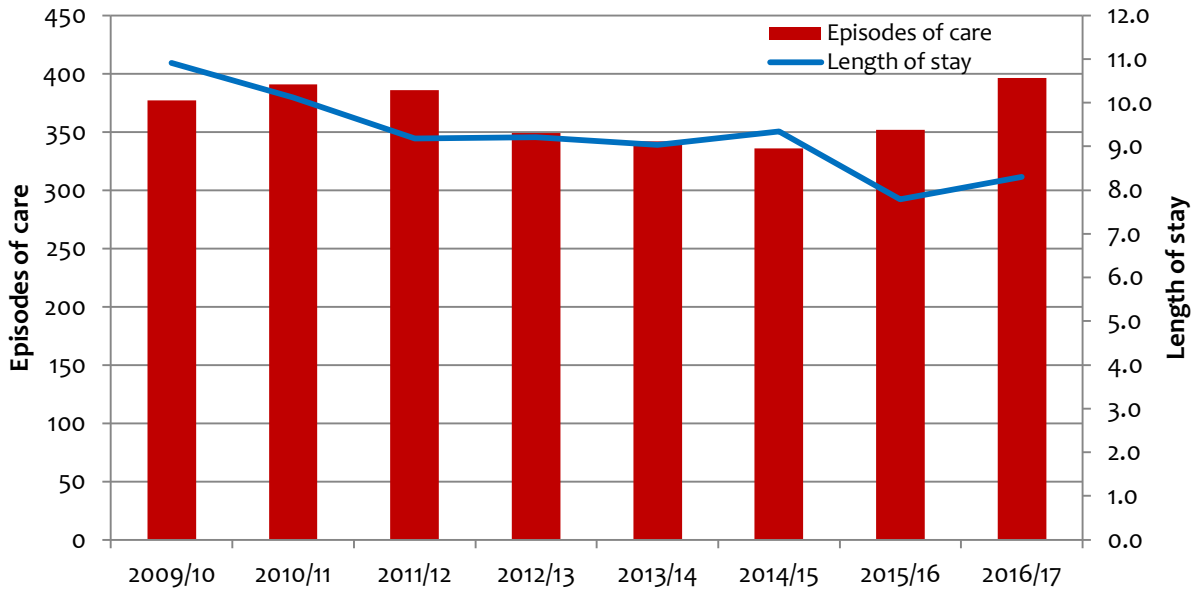
Over the last eight years, pedestrian injuries have accounted for 2929 episodes of care in Queensland public acute hospitals, resulting in 27089 patient days, with an average acute care length of stay of over 9 days (See Table 17 and Figure 22). The average acute care length of stay has reduced over time from almost 11 days in 2009/10 to approximately 8 days in 2016/17. There were 103 pedestrian injury episodes that ended with death in Queensland public acute hospitals.

Table 17: Pedestrian injuries over time in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	Total
Episodes of care	377	391	386	349	342	336	352	396	2929
Patient days	4113	3958	3544	3216	3089	3137	2742	3290	27089
Length of stay	10.91	10.12	9.18	9.21	9.03	9.34	7.79	8.31	9.25
*Death %	3.45%	3.84%	3.63%	3.44%	3.22%	2.38%	2.84%	5.05%	3.52%

*Percentage of episodes ending with death

Figure 22: Pedestrian episodes of care and length of stay in Qld public acute hospitals across all ages over time (2009/10-2016/17)



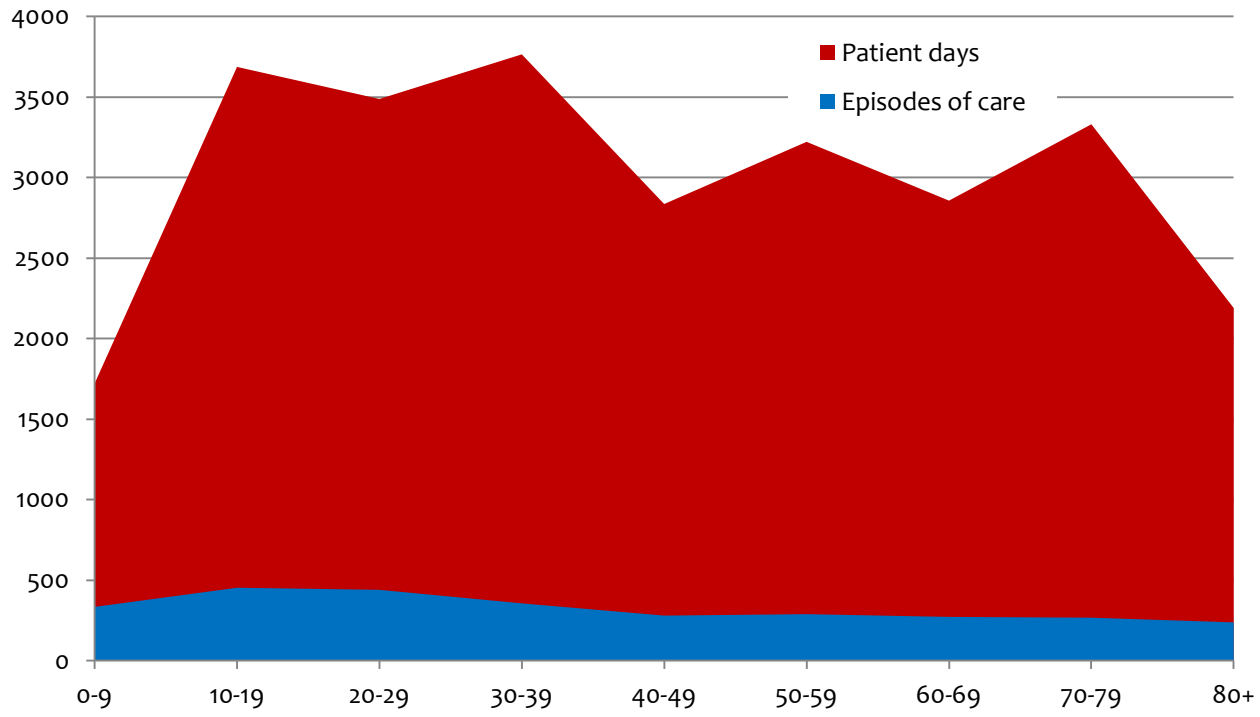
Examining pedestrian injury-related episodes by age groups, the most common age groups were 10-19 years of age, followed by 20-29 years of age with 10-29 year olds accounting for 30% of all pedestrian episodes (See Table 18 and Figure 23).

Table 18: Pedestrian episodes by age groups in Qld public acute hospitals (2009/10-2016/17)

Activity/Outcome	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Episodes of care	334	453	440	356	280	289	272	267	238	2929
Patient days	1721	3686	3487	3764	2835	3221	2856	3330	2189	27089
Length of stay	5.15	8.14	7.93	10.57	10.13	11.15	10.50	12.47	9.20	9.25
*Death %	3.59%	1.77%	3.18%	1.40%	3.57%	2.77%	4.04%	4.49%	9.66%	3.52%

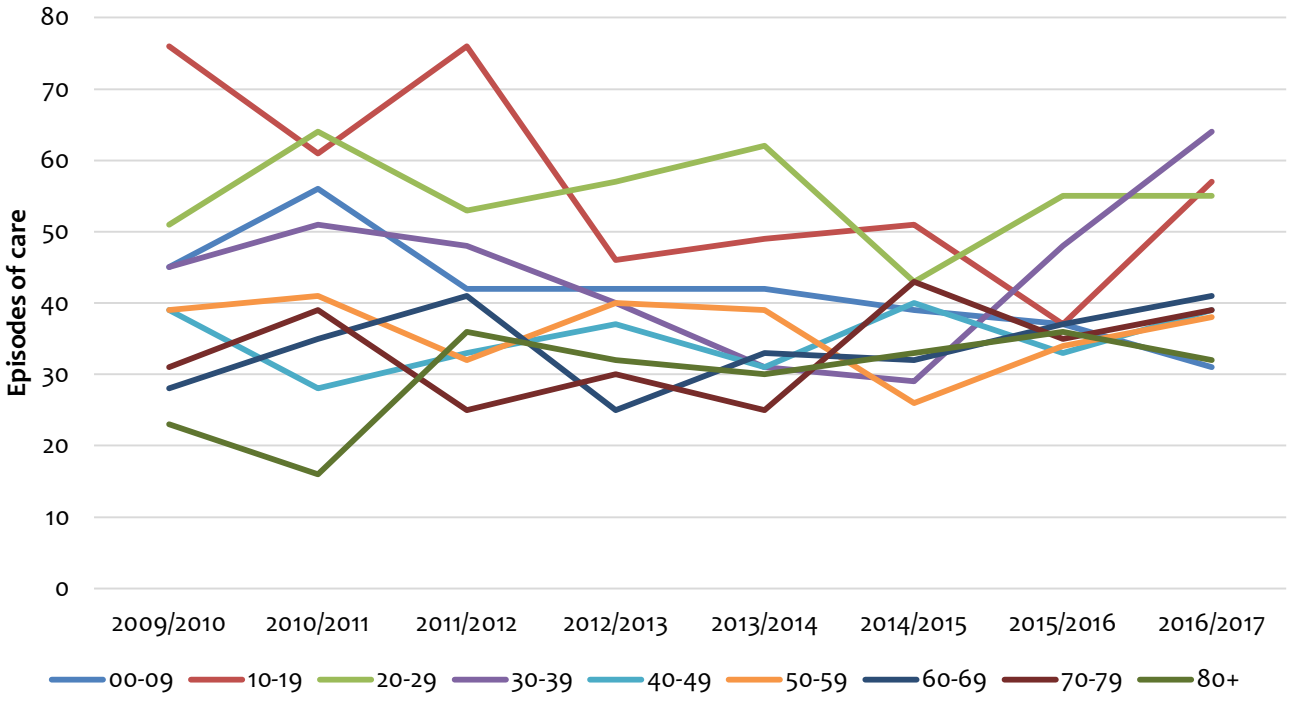
*Percentage of episodes ending with death

Figure 23: Eight year total pedestrian episodes of care and patient days in Qld public acute hospitals by age group (2009/10-2016/17)



The number of pedestrian injury episodes fluctuated over the years for different age groups, with some reductions for some age groups in the earlier years but some reversal of these trends for age groups ten years and over in more recent years (See Figure 23). The most substantial increase was for the 30- 39 year age group in recent years, who were the second lowest age group of pedestrian injury episodes in 2014/15 (accounting for 8% of all pedestrian injury episodes) but the most common age group in 2016/17 (accounting for 16% of all pedestrian injury episodes).

Figure 24: Pedestrian episodes of care by age group in Qld public acute hospitals over time (2009/10-2016/17)



Examining counterparts for pedestrian injury episodes for age groups, it can be seen that being hit by a car/pickup truck/van accounts for the large majority across age groups of around 80% of all pedestrian injury episodes (See Figure 25). Counterparts grouped into the Other category largely include heavy vehicles/buses for age groups between 20-69, and pedestrian conveyances/other specified vehicles for those younger than 20/aged over 70 years.

Figure 25: Counterpart by age group for pedestrian episodes of care in Qld public acute hospitals over time (2009/10-2016-17)

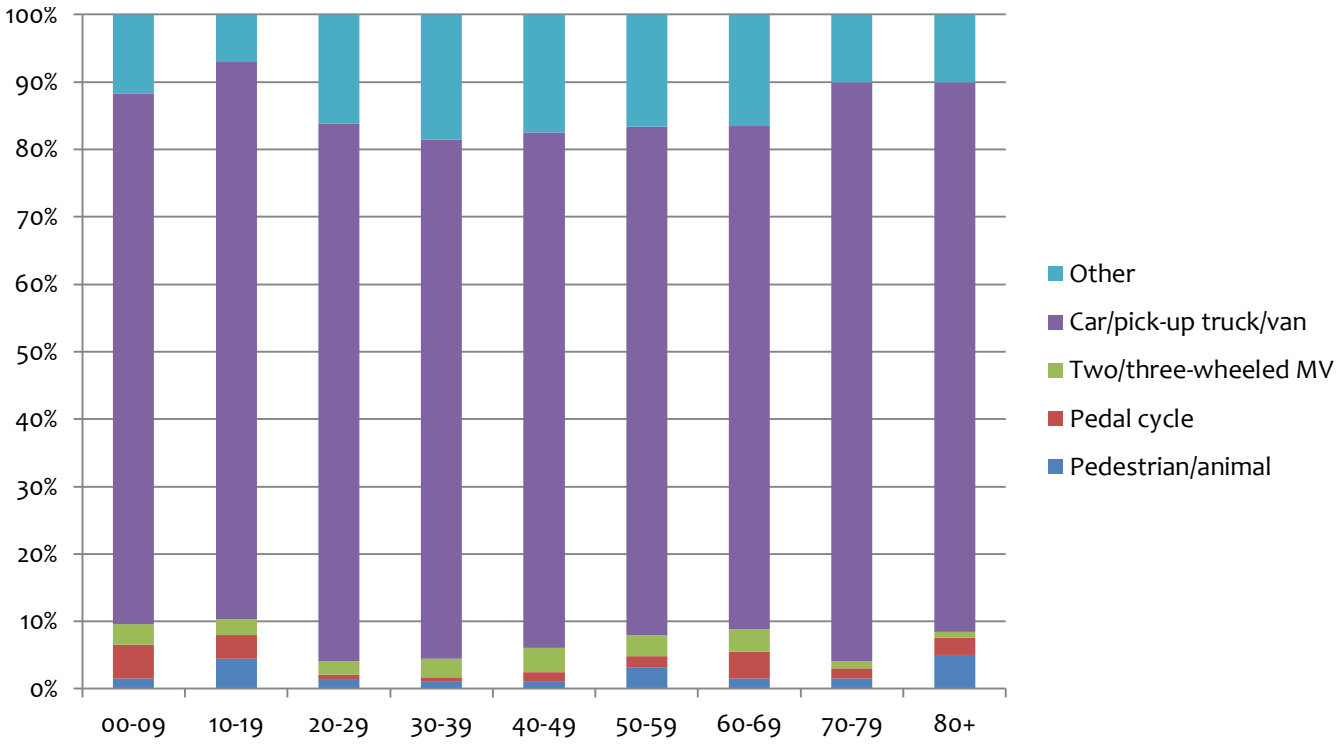


Table 19: Top 10 principal injury diagnoses for pedestrian injury episodes in Qld public acute hospitals over eight year period (2009/10-2016/17)

Principal diagnosis	8 Year Total	Avg LOS
Fracture of lower leg, including ankle	586	9.63
Intracranial injury	451	14.43
Fracture of lumbar spine and pelvis	228	11.82
Fracture of femur	175	9.48
Fracture of skull and facial bones	165	6.08
Fracture of rib(s), sternum and thoracic spine	122	9.58
Fracture of forearm	115	4.67
Fracture of shoulder and upper arm	111	5.97
Fracture of foot, except ankle	78	7.41
Injury of intra-abdominal organs	77	9.95