Road traffic injury hospitalisations

This factsheet presents statistics for hospitalisations caused by road traffic injuries in New Zealand.

Key facts

In 2018, there were 4,363 hospitalisations for traffic-related injuries in New Zealand. The hospitalisation rate has continued to climb steadily year-on-year since 2014.

Hospitalisation rates were highest for males, Māori, people aged 15–24 and 85+ years, people living in more deprived areas, and those living outside main urban areas.

Motorcyclists had a much greater risk of injury than users of other modes of transport, taking into account time spent travelling and distance travelled.

The highest hospitalisation rates occurred in Northland DHB. The lowest hospitalisation rates were in Capital & Coast and Hutt DHBs.

The health impact of road traffic accidents

Traffic-related deaths and injuries are the main health impact of road transport in New Zealand (Briggs et al 2016). Traffic injuries may affect all types of road users, though pedestrians, cyclists and motorcyclists are particularly vulnerable as they tend to suffer more severe injuries from collisions, due to lack of personal protection. By comparison, vehicle occupants are protected by the vehicle body and fitted safety features (such as seatbelts or airbags).

Traffic injury hospitalisations increased from 2014 to 2018

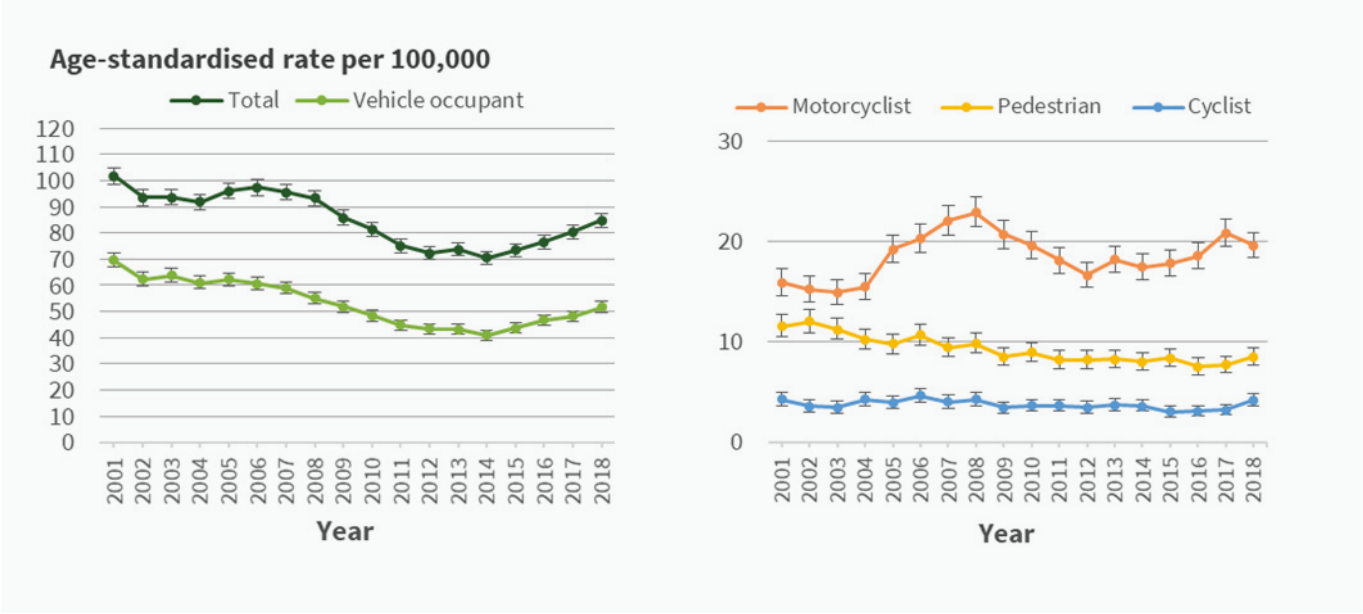
In 2018, there were 4,363 hospitalisations for traffic injuries in New Zealand. The majority of these were for the occupants of motor vehicles (61%, 2,667 hospitalisations). A further 23% (996 hospitalisations) were motorcyclists, while 10% (438 hospitalisations) were pedestrians and 5% (215 hospitalisations) were cyclists. The remaining 47 hospitalisations were for other modes of transport.

The age-standardised rate for all traffic injury hospitalisations decreased between 2001 and 2014 but has risen steadily since then. The pattern of change is primarily driven by changes in the hospitalisation rate for vehicle occupants (Figure 1a).

The hospitalisation rate for motorcyclists decreased from 2008 to 2012, but increased somewhat since then (Figure 1b).

The hospitalisation rate for pedestrians decreased from 11.5 per 100,000 in 2001 to 8.5 per 100,000 in 2018. The rate for cyclists stayed mostly unchanged throughout this period (Figure 1b).

Figure 1a & 1b: Traffic injury hospitalisations, by mode of transport, 2001–2018



Source: National Minimum Dataset.

Motorcyclists were most at risk of injury

Although travel by motorcycle only represents a very small proportion of the time and distance New Zealanders travel every year, the risk of injury hospitalisations per time and distance travelled was substantially higher for motorcyclists than any other mode of transport. In 2015–18, for every million hours travelled by motorcycle annually there were 348.9 hospitalisations, while for every million kilometres travelled, there were 8.2 hospitalisations (Table 1).

Table 1: Traffic injury hospitalisation risk by mode of transport, 2015–18

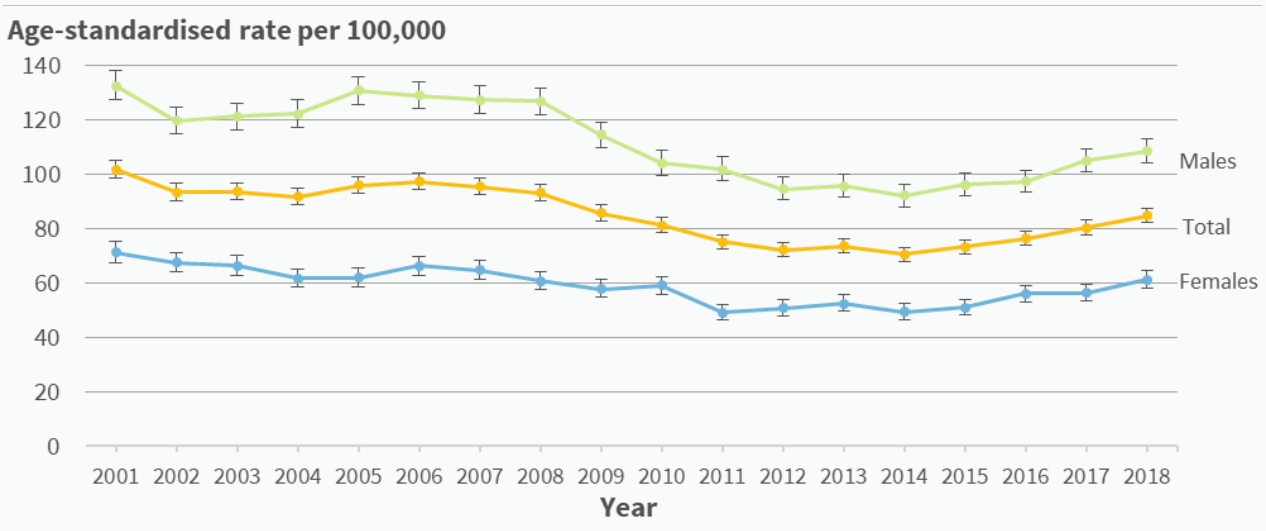
	Vehicle occupant	Motorcyclist	Pedestrian	Cyclist	All traffic
Million hours travelled	1,232.8	2.7	143.2	21.9	**1,400.6**
Million kilometres travelled	47,886.7	113.2	666.5	304.2	**48,970.5**
Number of hospitalisations	2385	933	396	168	**3,912**
Hospitalisations per million hours	**1.9**	**348.9**	**2.8**	**7.7**	**2.8**
Hospitalisations per million kilometres	**<0.1**	**8.2**	**0.6**	**0.6**	**0.1**

Notes: The annual average injury hospitalisations for the four-year period 2015–2018 from the National Minimum Dataset was calculated based on calendar year (January–December), while the annual average time and distance travelled (from the 2015–2018 Household Travel Survey) was based on the financial year (July–June). These are the intervals for which the data is recorded in each source.
Source: National Minimum Dataset (Ministry of Health) and the New Zealand Household Travel Survey (Ministry of Transport), 2015–18.

Hospitalisation rates for both sexes have increased since 2014

The hospitalisation rates for both sexes were substantially lower in 2018 than in 2001. However, both rates have increased since 2014. The 2018 rates for both males (108.6 per 100,000) and females (61.2 per 100,000) were significantly higher than in 2014, when both rates were at their lowest level since 2001.

Figure 2: Traffic injury hospitalisations, by sex, 2001–18

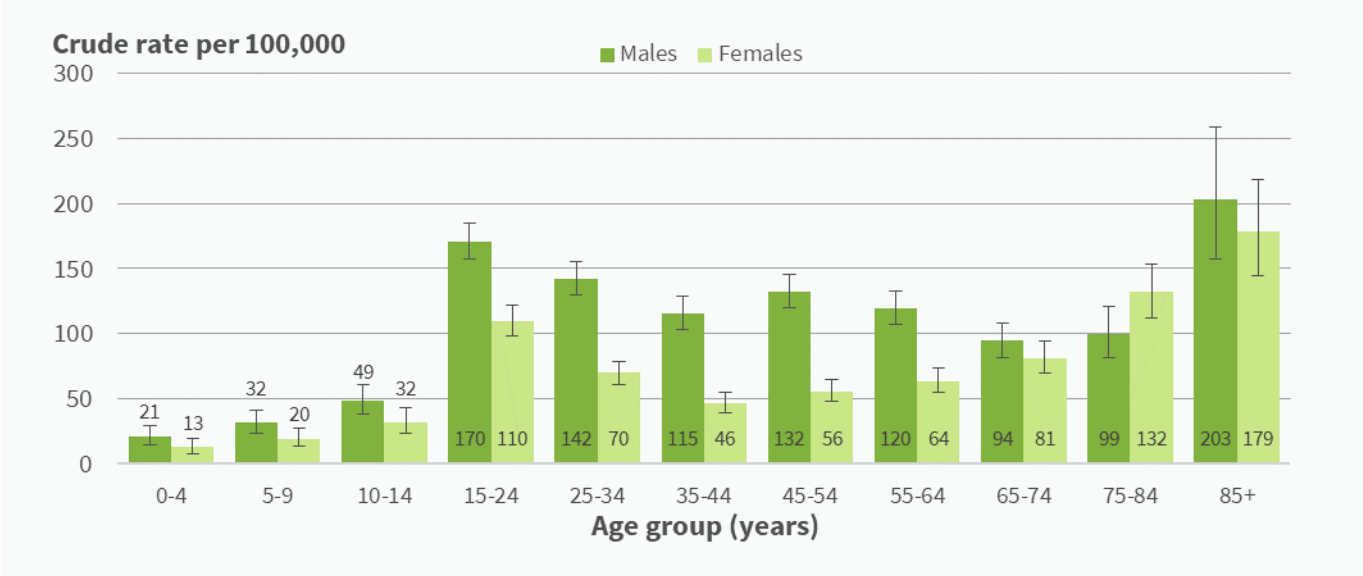


Source: National Minimum Dataset.

The highest hospitalisation rates were among 15–24-year olds and 85+ year olds

People aged 15–24 years old and 85+ years had the highest road traffic injury hospitalisation rates in 2018. In the working age groups from 15–64 years, males had significantly higher rates than females (Figure 3).

Figure 3: Traffic injury hospitalisations, by age group and sex, 2018

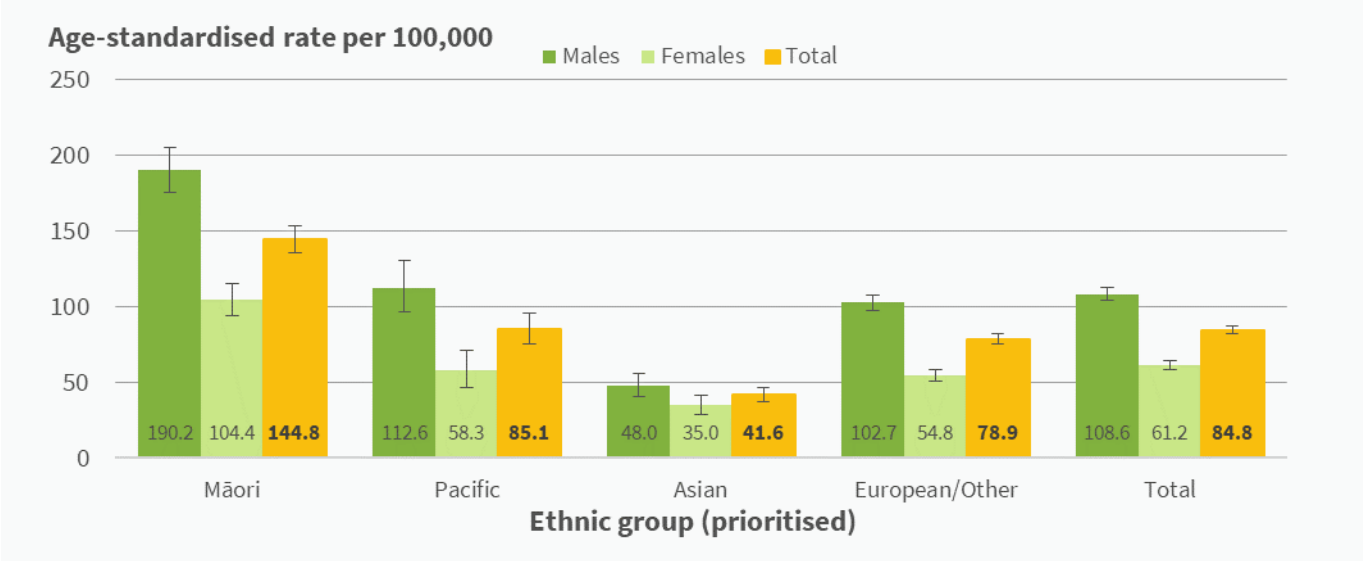


Source: National Minimum Dataset.

Māori had higher traffic injury hospitalisation rates

In 2018, Māori had higher age-standardised hospitalisation rates for traffic injuries than other ethnic groups, both overall as well for males and females. Males had significantly higher hospitalisation rates than females in all ethnic groups except for Asians.

Figure 4: Road traffic injury hospitalisation rates, by ethnic group (prioritised) and sex, 2014–18

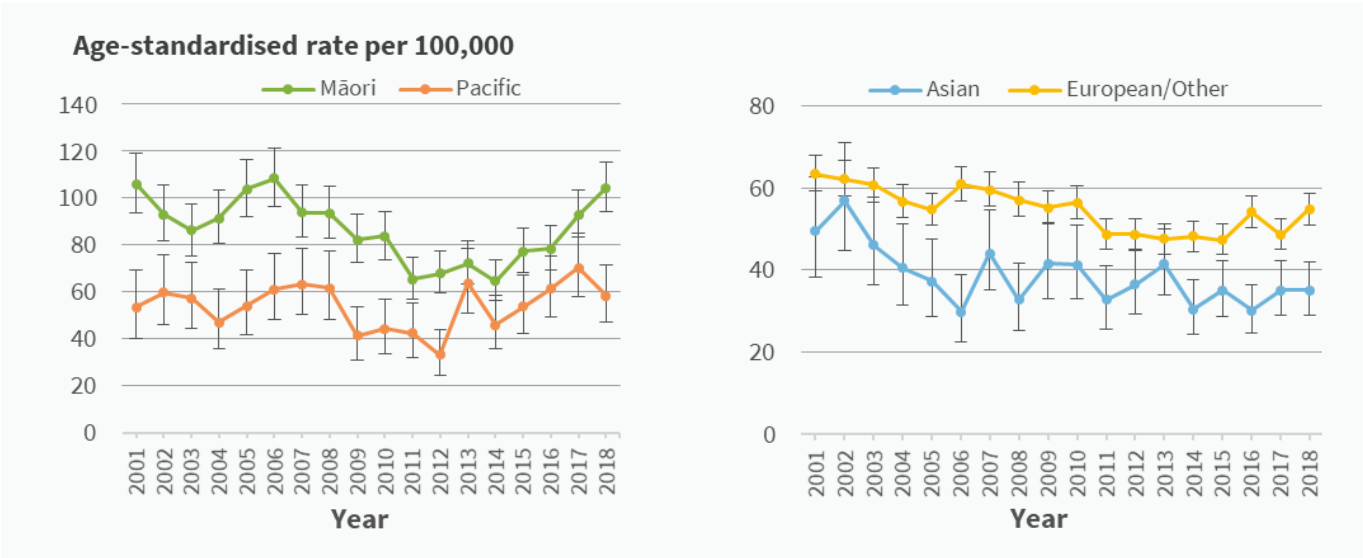


Source: National Minimum Dataset.

The hospitalisation rate for Māori was consistently higher than for any other ethnic group from 2001 onwards. The rate for Māori increased from a low rate in 2014 to the highest rate since 2006 in 2018 (144.7 per 100,000). The rate for Pacific people also increased somewhat from 2012 onwards (Figure 5a).

The rate for the European/Other group also increased between 2015 and 2018 (Figure 5b), despite a generally decreasing trend since 2001. The rate for Asians decreased between 2001–06 and remained stable from that point onward.

Figure 5a & 5b: Road traffic injury hospitalisation rates, by ethnic group (prioritised), 2001–18

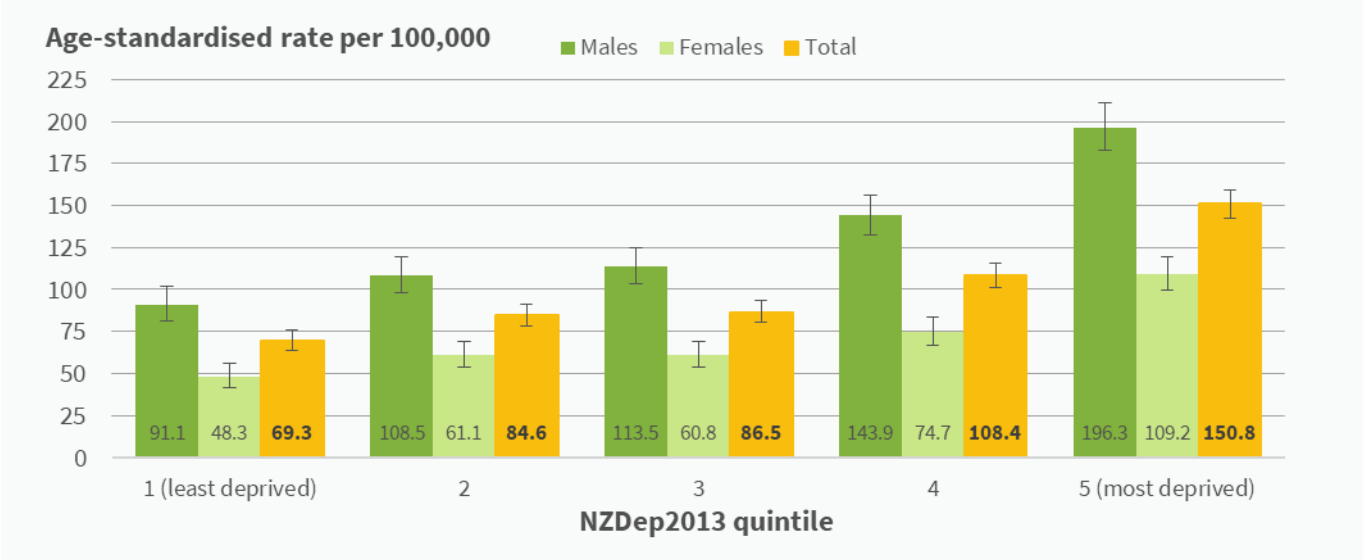


Source: National Minimum Dataset.

People living in more deprived areas had higher hospitalisation rates for traffic injuries

Hospitalisation rates in the most deprived areas were much higher than those in the least deprived areas in 2018, for both males and females (Figure 6). Standardising for age, people living in the most deprived areas were twice as likely to be hospitalised for a road traffic injury than those in the least deprived areas (standardised rate ratio = 2.2, 95% confidence interval 2.0–2.4).

Figure 6: Road traffic injury hospitalisation rates, by NZDep2013 quintile and sex, 2018

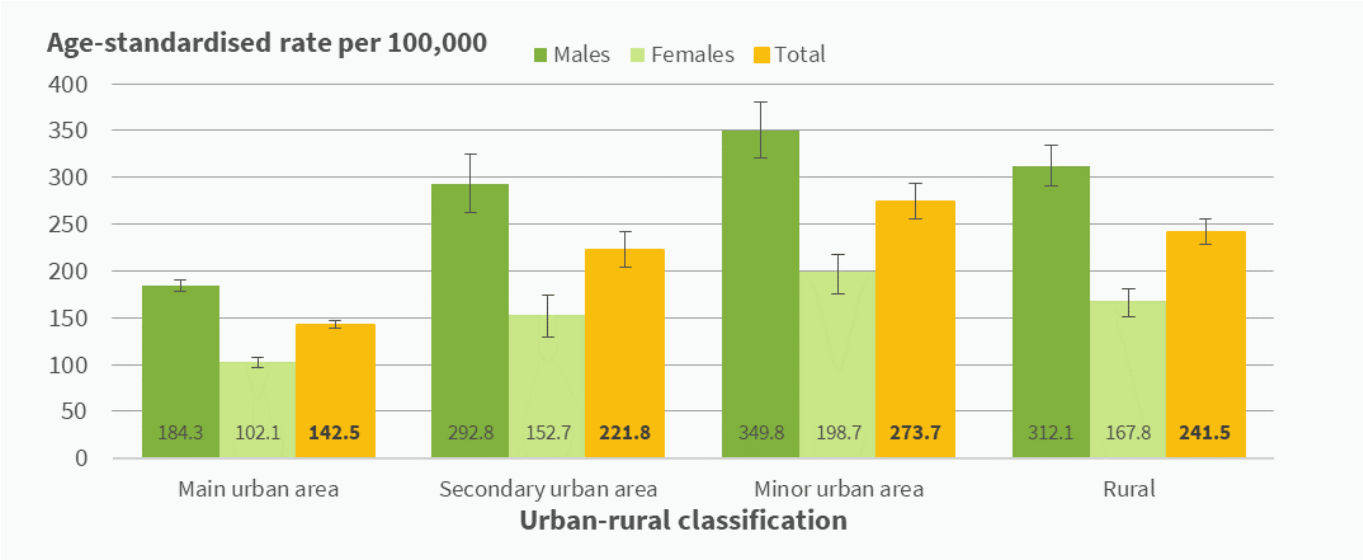


Source: National Minimum Dataset.

People living in main urban areas had lower traffic injury hospitalisation rates

People living in main urban areas had much lower hospitalisation rates for road traffic injuries than people living in secondary urban, minor urban and rural areas in 2018 (Figure 7).

Figure 7: Road traffic injury hospitalisation rates, urban-rural classification and sex, 2018

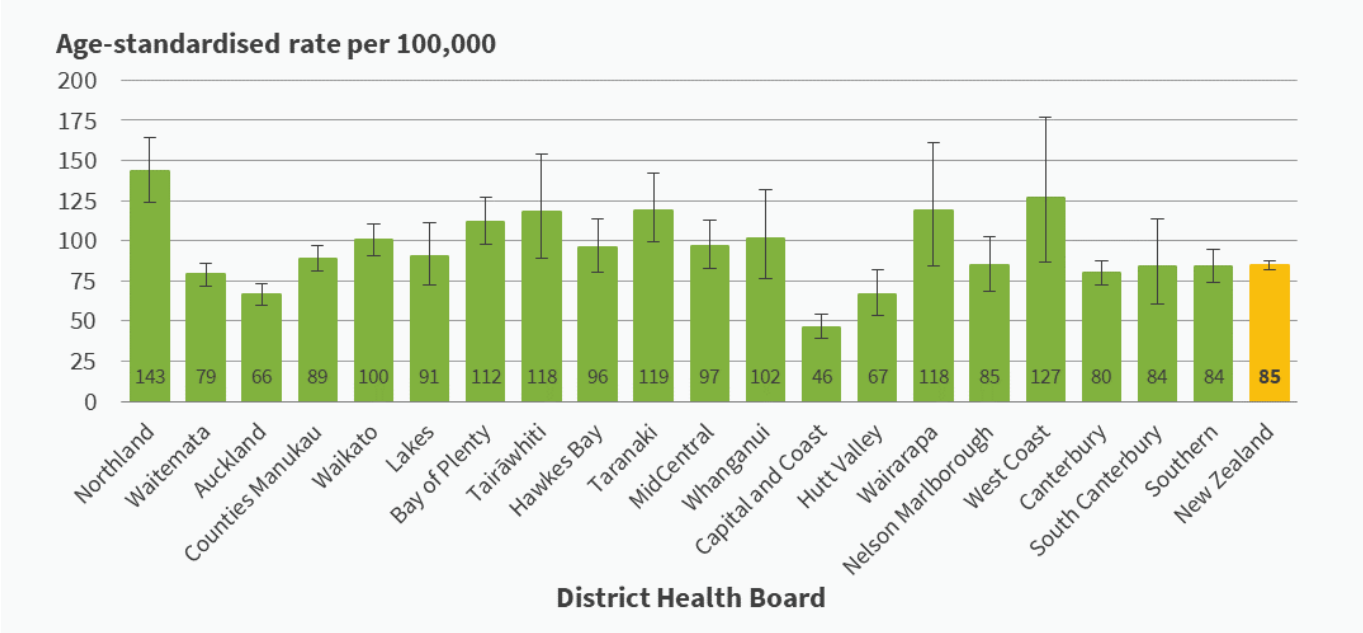


Note: Urban/rural classification is for 2013. Main urban areas refer to major towns and cities with a population of 30,000 or more. Secondary urban areas are smaller towns with a population of 10,000–29,999 people. Minor urban areas are towns with a population of 1,000–9,999 people. Rural areas include rural centres, and rural areas outside of these.
Source: National Minimum Dataset.

The highest traffic injury rates occurred in Northland DHB

The highest hospitalisation rates for all forms of traffic injury combined were in Northland DHB, while the lowest rates were in Capital & Coast DHB (Figure 8).

Figure 8: Road traffic injury hospitalisation, by DHB, 2018

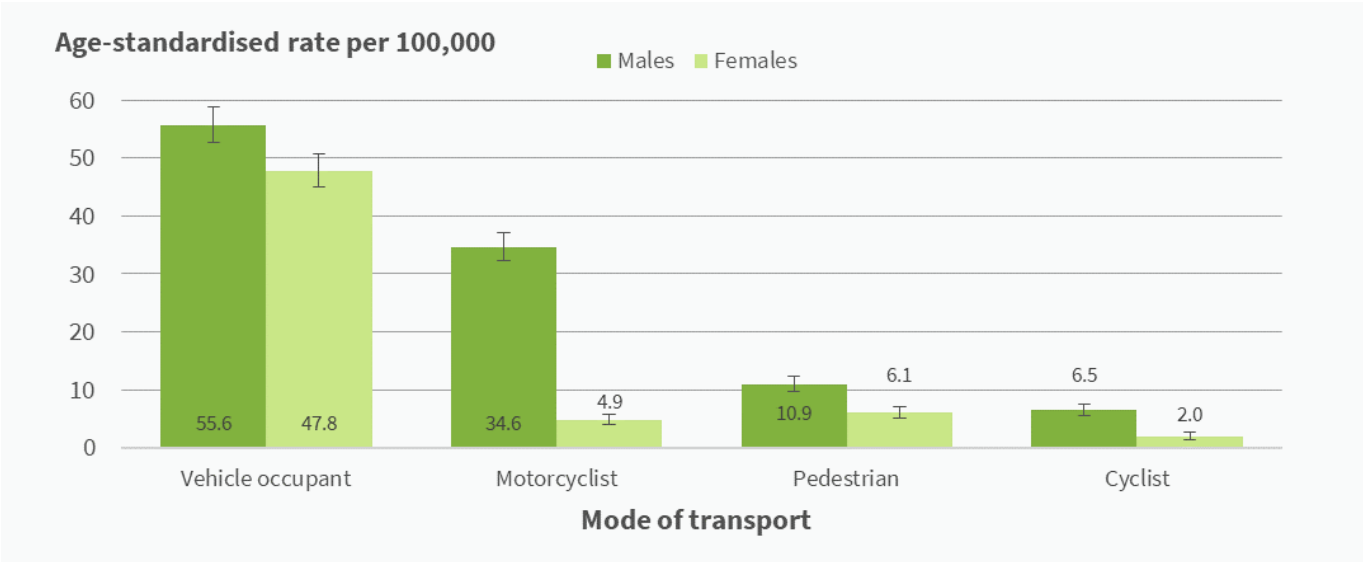


Source: National Minimum Dataset.

Road traffic injury hospitalisation statistics by road user type

In 2018, males had significantly higher hospitalisation rates than females across all modes of transport (Figure 9). The contrast between males and females was especially strong among motorcyclists.

Figure 9: Road traffic injury hospitalisations, by mode of transport and sex, 2018



Source: National Minimum Dataset.

For vehicle occupant injuries, young adults (15–24 years) and older people (75+ years) had the highest hospitalisation rates (Figure 10a). Motorcyclist hospitalisation rates were high among most age groups of legal driving age but fell away past the age of 65 (Figure 10b).

For pedestrian injuries, the highest hospitalisation rates were among people aged 75 years and over (Figure 10c). For cyclist injuries, hospitalisation rates were somewhat, but not significantly higher among those aged 10–14 years and 35–74 years (Figure 10d).

Figure 10a - 10d: Hospitalisation rates by age group and mode of transport, 2018

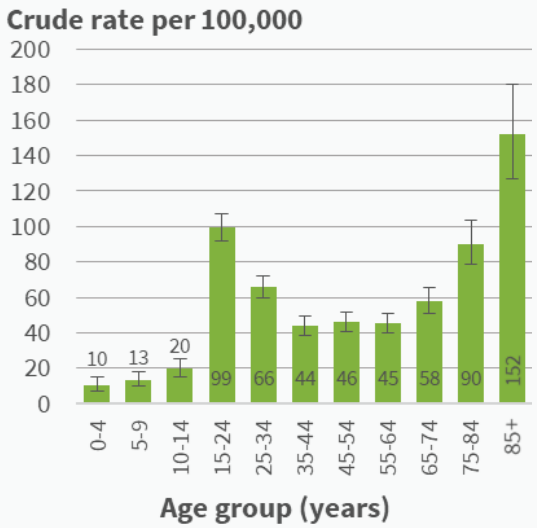


Figure 10a: Vehicle occupant hospitalisation rates, by age group, 2018

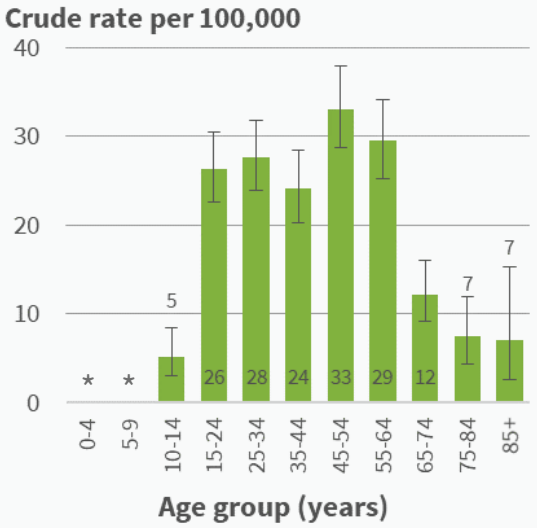


Figure 10b: Motorcyclist hospitalisation rates, by age group, 2018

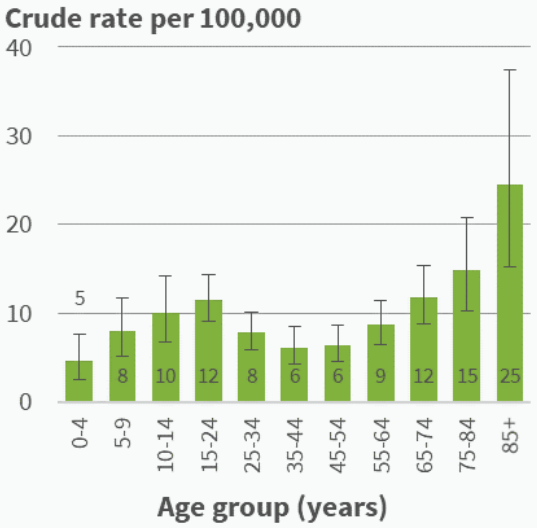


Figure 10c: Pedestrian hospitalisation rates, by age group, 2018

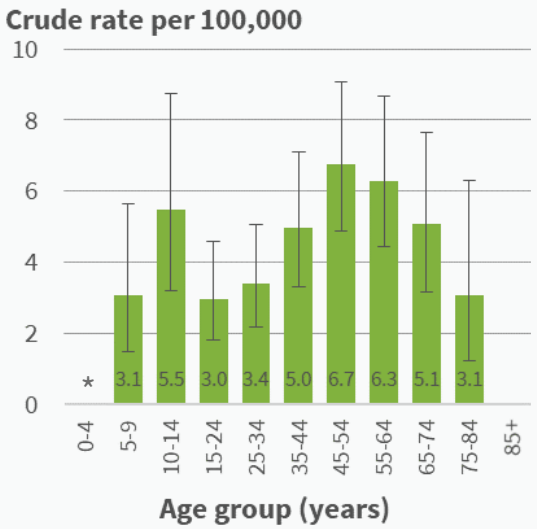
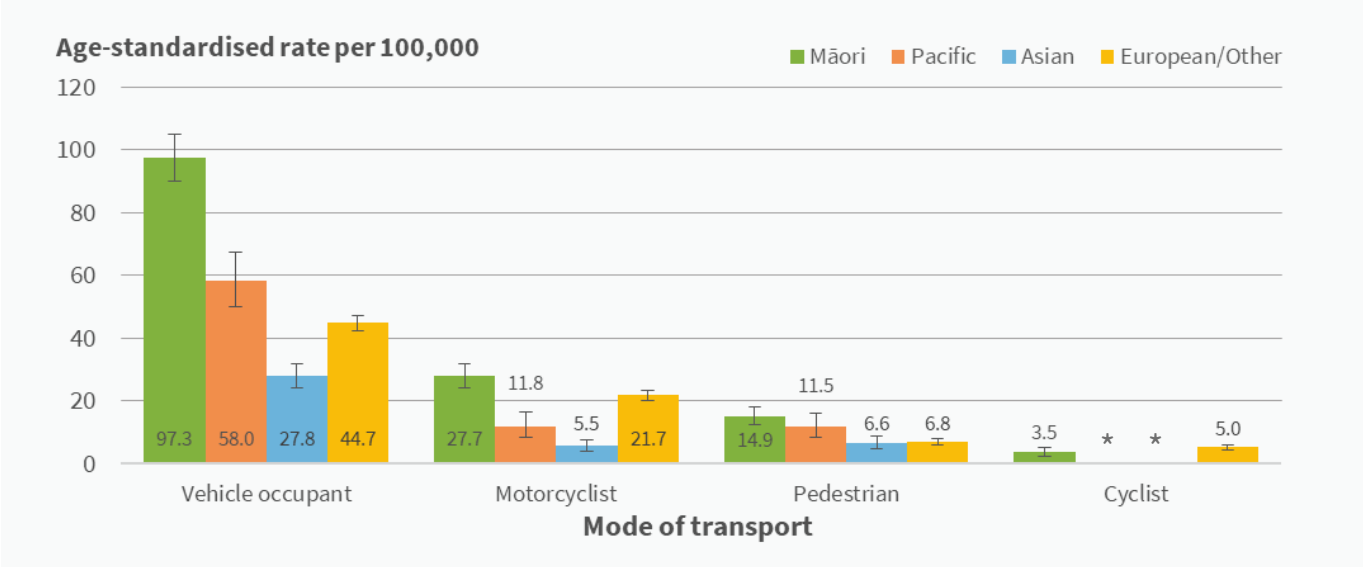


Figure 10d: Cyclist hospitalisation rates, by age group, 2018

Note: An asterisk (*) shows that the rate has been supressed due to low numbers (<5).
Source: National Minimum Dataset.

In 2018, Māori had significantly higher hospitalisations rates for vehicle occupant and motorcyclist injuries than other ethnic groups (Figure 11). Māori and Pacific people also had higher rates of pedestrian injury.

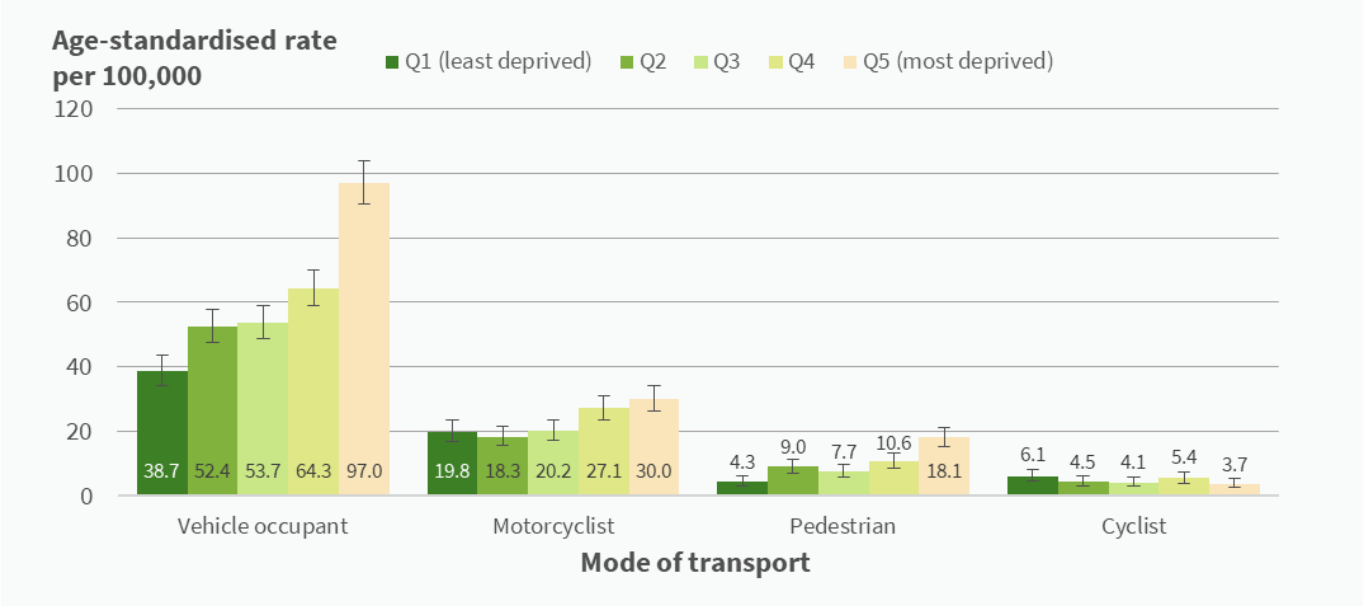
Figure 11: Road traffic injury hospitalisations, by ethnic group (prioritised) and mode of transport, 2018



Notes: An asterisk (*) shows that the rate has been suppressed due to low numbers (<20).
Source: National Minimum Dataset.

In 2018, the hospitalisation rates for motor vehicle occupants, motorcyclists and pedestrians were all higher in the most deprived quintiles than in the least deprived. There was a particularly strong contrast in the hospitalisation rates for vehicle occupants between the least and most deprived quintiles. For cyclist injuries, the hospitalisation rate was higher in the least deprived quintile than in the most deprived quintile (Figure 12).

Figure 12: Road traffic injury hospitalisations, by NZDep2013 quintile and mode of transport, 2018



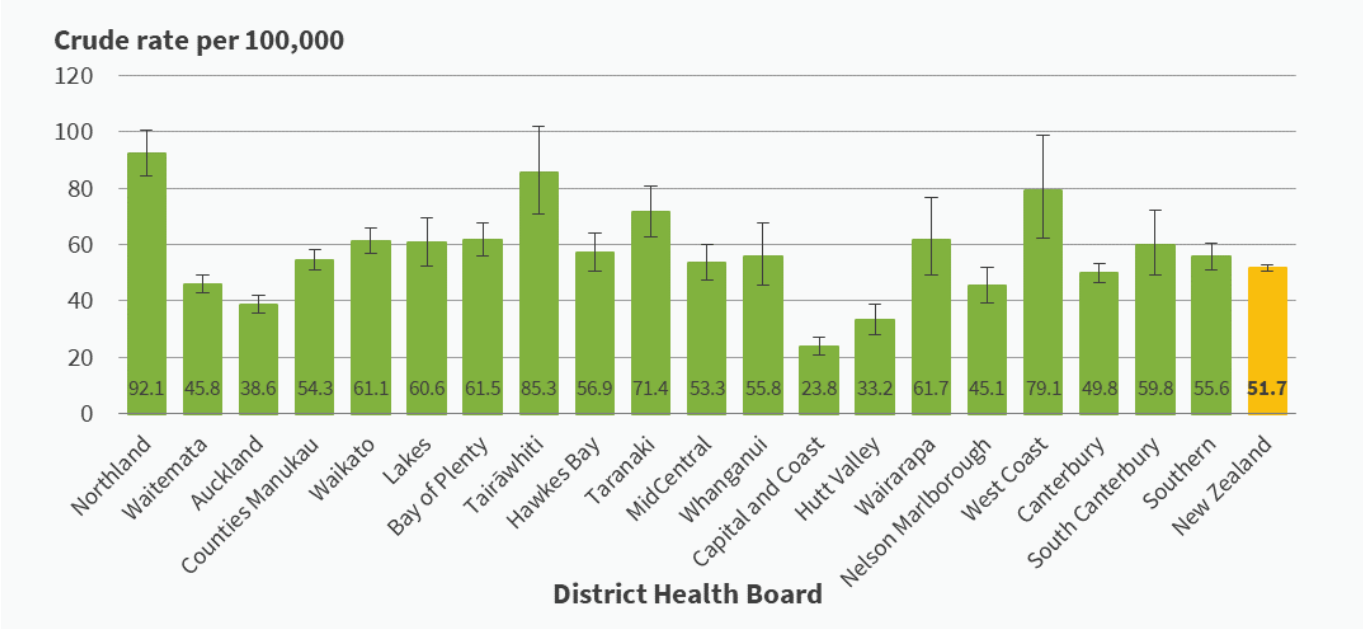
Source: National Minimum Dataset.

Road traffic injury hospitalisation statistics by road user type and DHB

The following graphs present crude rates rather than age-standardised rates, due to low numbers of hospitalisations in some district health boards (DHBs). This means that the results do not take into account the differing population age structures in different DHBs.

Similar to the overall hospitalisation rates (see Figure 8 above), Northland DHB also had the highest rate of vehicle occupant hospitalisations in 2016–18, and Capital and Coast DHB had the lowest (Figure 13).

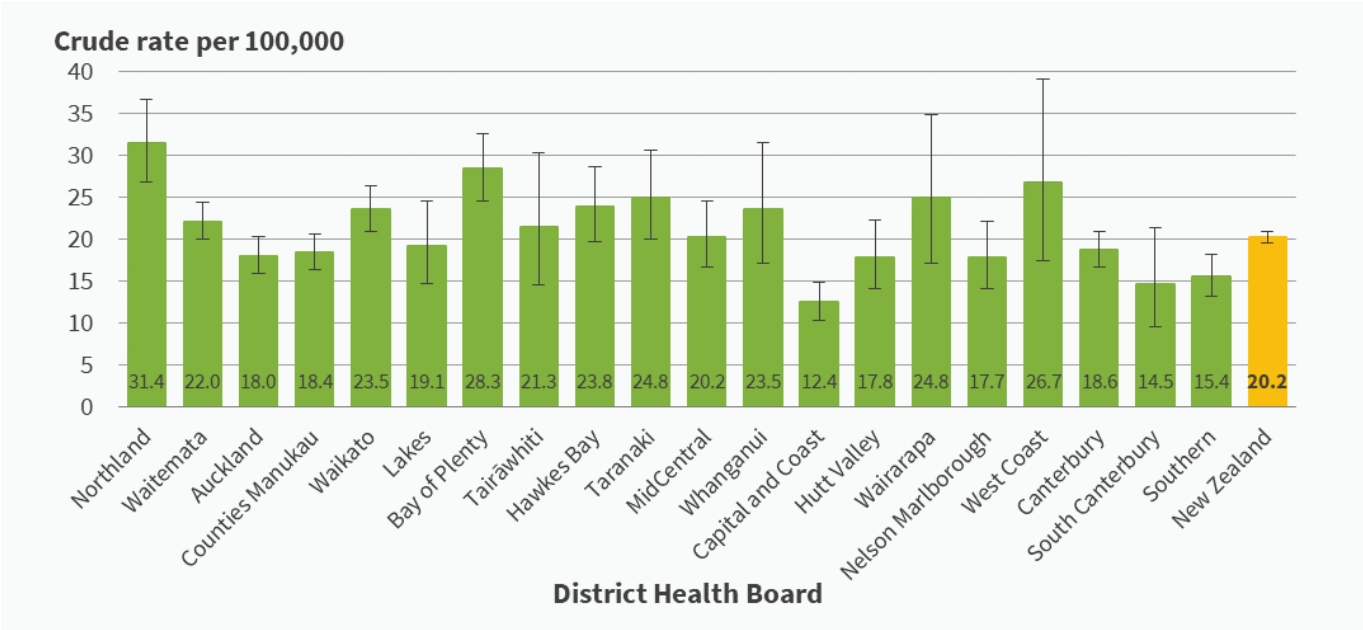
Figure 13: Vehicle occupant hospitalisations, by DHB, 2016–18



Source: National Minimum Dataset

Furthermore, Northland DHB also had the highest motorcyclist hospitalisation rates in 2016–18, while Capital and Coast DHB once again had the lowest.

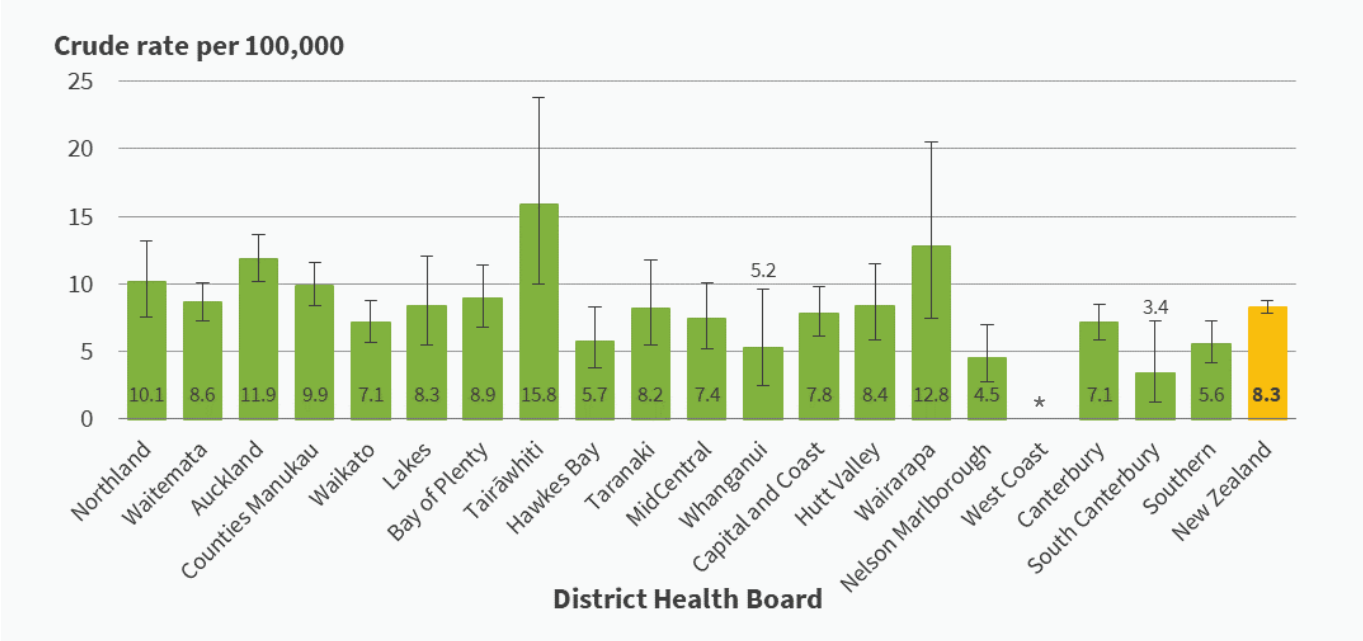
Figure : 14 Motorcyclist hospitalisations, by DHB, 2016–18



Source: National Minimum Dataset

Hospitalisation rates for pedestrian injuries were highest in Tairāwhiti DHB, and lowest in South Canterbury DHB. (Figure 15).

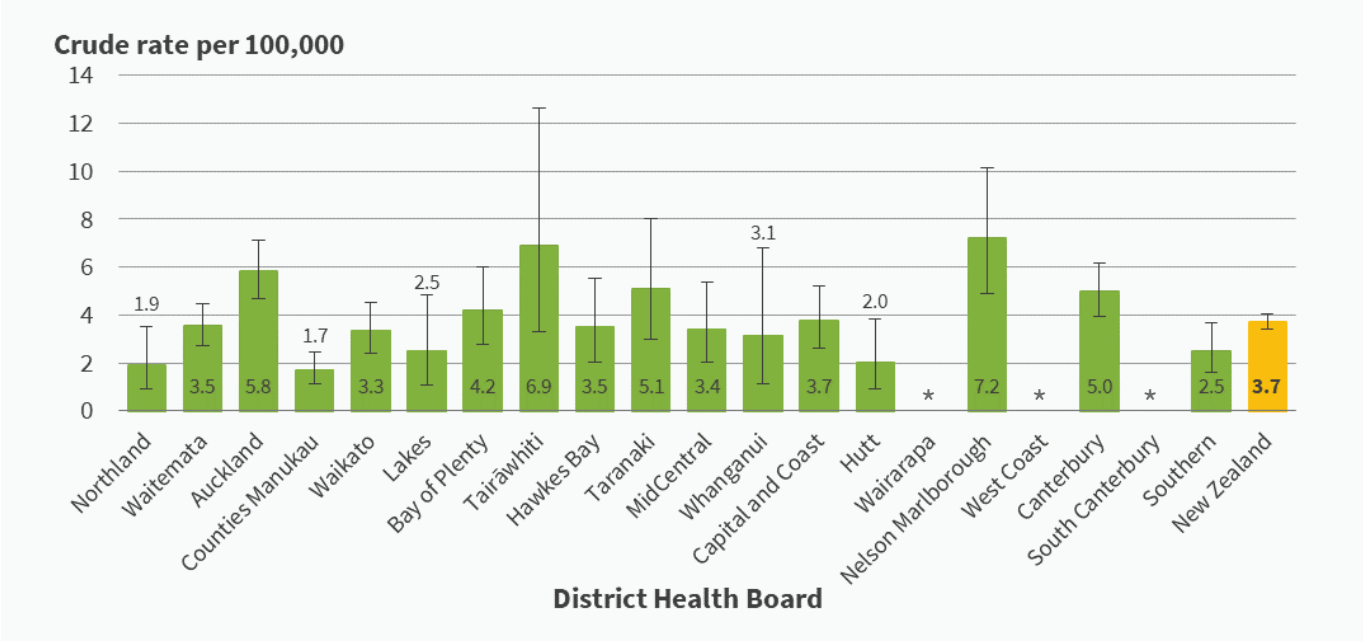
Figure 15: Pedestrian hospitalisations, by DHB, 2016–18



Notes: An asterisk (*) shows that the crude rate was suppressed due to low counts (<5).
Source: National Minimum Dataset

The highest rate of cyclist hospitalisations occurred in Nelson Marlborough DHB, and the lowest in Counties Manukau DHB (Figure 16).

Figure 16: Cyclist hospitalisations, by DHB, 2016–18



Notes: An asterisk (*) shows that the crude rate was suppressed due to low counts (<5).
Source: National Minimum Dataset

Data for this factsheet

Data for this indicator comes from the National Minimum Dataset, published by the Ministry of Health. The following ICD–10AM codes were used to identify relevant cases from the dataset:

- Vehicle occupant [V30–V79] (.4–.9), [V83–V86] (.0–.3);
- Motorcyclist [V20–V28] (.3–.9), V29(.4–.9);
- Pedal cyclist [V12–V14] (.3–.9), V19(.4– .6);
- Pedestrian [V02–V04] (.1,.9), V09.2;
- Other: V80(.3–.5), V81.1, V82.1;
- Unspecified: V87(.0–.8), V89.2.

These ICD codes are consistent with the classification of external cause of injury used by the Centers for Disease Control and Prevention (2002). Hospitalisations have excluded deaths, day cases, short Emergency Department stays, transfers, overseas visitors, and readmissions (Langley et al, 2002; Ministry of Health, 2006, 2015). Age-standardised rates have been presented where possible, to account for the population age structures of different population groups.

95% confidence intervals have been presented as error bars on graphs. Unless otherwise stated, all differences mentioned in the text between two values are statistically significant at the 5% level or less. With the exception of table 1, all denominators are the population of the relevant subgroup. For additional information, see the metadata link below.

References

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Other transport topics include:

Road traffic injury mortality

Main mode of transport to work on Census day

Household travel time by mode of transport

Number of motor vehicles

Active transport to and from school

Unmet GP need due to transport

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Further information

For descriptive information about the data Metadata Sheet

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