Asthma hospitalisations (0–14 years)

This factsheet presents statistics on asthma hospitalisations among children aged 0–14 years in New Zealand. The data comes from the National Minimum Dataset, from the Ministry of Health.

Key facts

In 2018, there were 7,182 asthma-related hospitalisations (including wheeze) among children aged 0–14 years in New Zealand. The number of asthma hospitalisations increased between 2006–2018.

The asthma hospitalisation rate was the highest among younger children (0–4 years old) and lowest in older children (10–14 years old).

Boys had a higher asthma hospitalisation rate than girls.

The overall asthma hospitalisation rate was much higher for Pacific and Māori than for Asian and European/Other children, after adjusting for age.

Asthma hospitalisation rates were twice as high in the most deprived areas (NZDep2013 quintile 5) as in the least deprived areas (quintile 1) in 2018, after adjusting for age.

Auckland, Lakes, Hawke's Bay and Hutt Valley District Health Board (DHB) were the DHBs with the highest asthma hospitalisation rate in 2018.

Association between environmental exposures and asthma

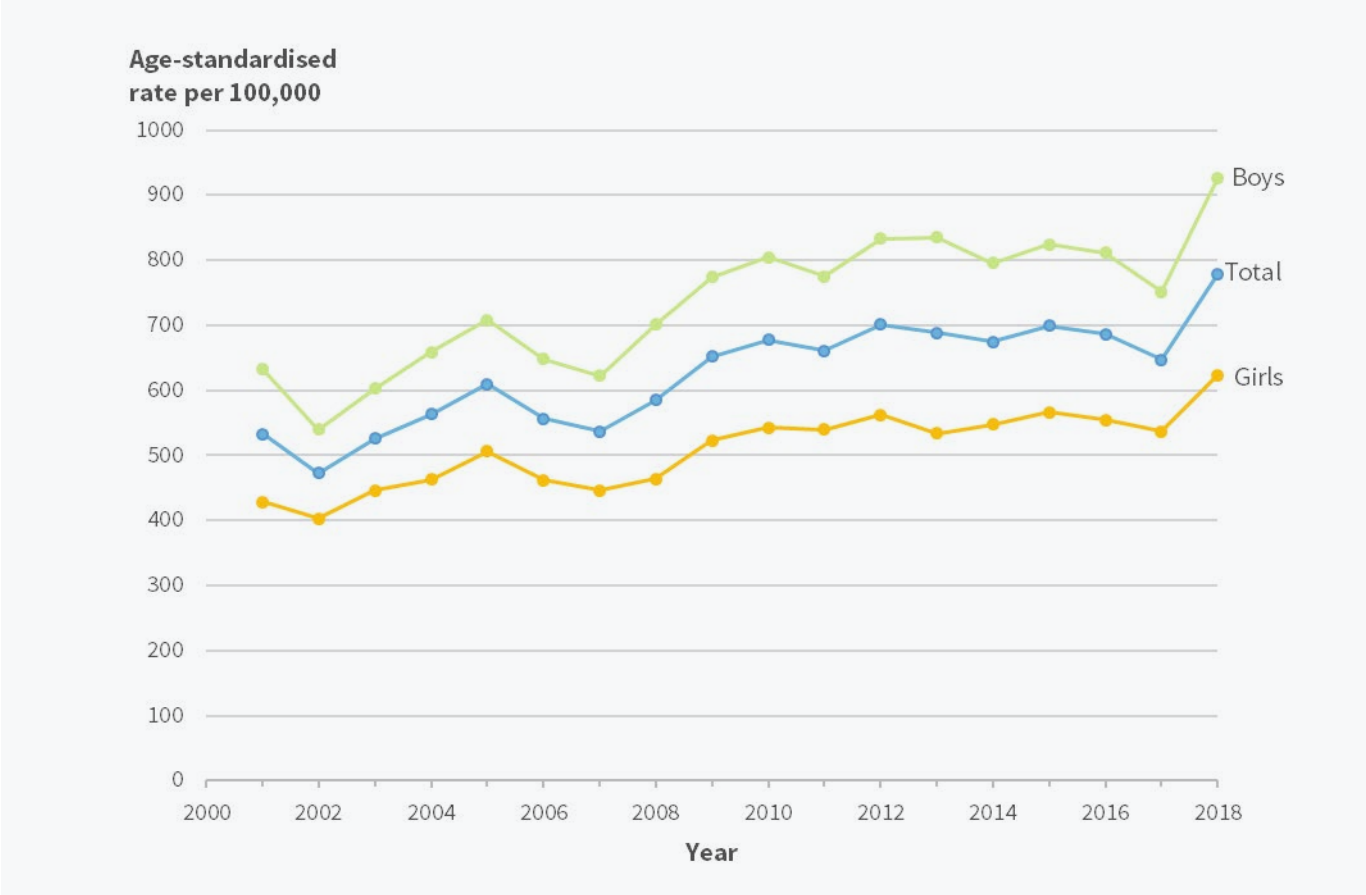
Asthma is a chronic respiratory condition that causes coughing, wheezing and shortness of breath (Health Navigator New Zealand 2020). The environment in which we live in, work and learn contributes to both the development of allergic reaction and the exacerbation of asthma (Romando-Woodward 2013). An environmental trigger may include exposure to household allergens (dust mites, animal fur, pollens and moulds). Other triggers that may provoke asthma attacks include indoor air pollutants (eg, cooking on an indoor open fire) or outdoor air pollutants (eg, particularly nitrogen dioxide, sulphur dioxide, particulate matter (PM2.5) and car exhausts). Evidence shows that second-hand smoke exposure can increase the risk of asthma in children (The Global Asthma Network 2018).

New Zealand has one of the highest rates of childhood asthma in the developed world (OECD 2015). Each year, a small number of children die from asthma; in 2016, five children died from asthma in New Zealand (Ministry of Health 2019a). Asthma can reduce an individual's quality of life and limit their ability to participate in activities (Asthma Washington State 2014). Poorly managed asthma increases the likelihood of hospitalisation and unplanned doctor visits.

Over 7,000 hospitalisations for childhood asthma in 2018

In 2018, there were 7,182 asthma-related hospitalisations among children aged 0–14 years in New Zealand. These hospitalisations represented an age-standardised rate of 779 per 100,000. This is a 65% increase from 2002 (473 per 100,000) to 2018 (Figure 1).

Figure 1: Asthma hospitalisations in children aged 0–14 years, by sex, 2001–2018 (age-standardised rate per 100,000)



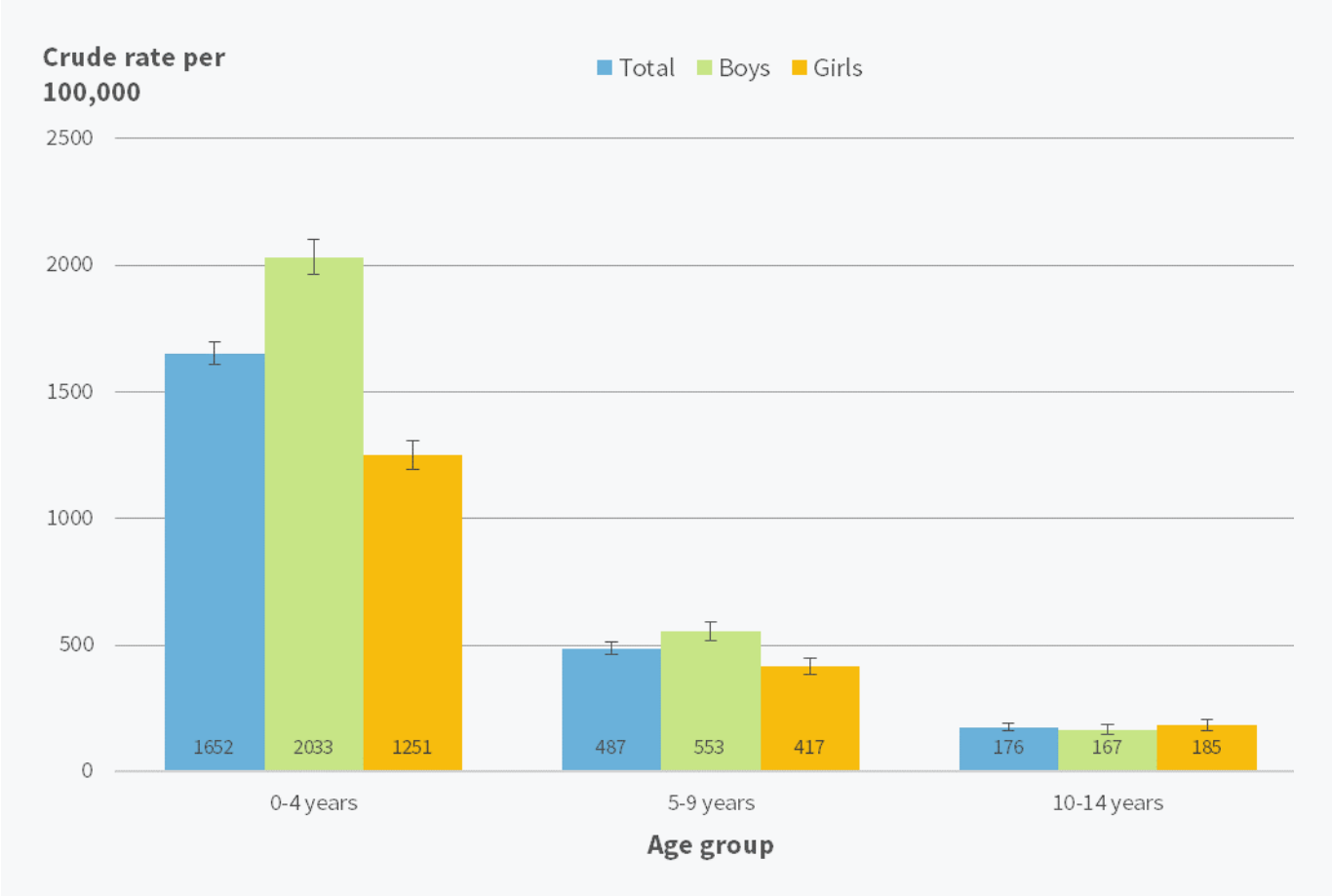
Source: National Minimum Dataset

Boys had higher asthma hospitalisations rates than girls. In 2018, the age-standardised rate was 927 per 100,000 for boys, compared with 623 per 100,000 for girls. This pattern is similar to those seen in previous years.

Younger children had higher asthma hospitalisation rates

Children aged 0–4 years had the highest asthma hospitalisation rate (1,652 per 100,000) compared with children aged 5–9 years (487 per 100,000) and children aged 10–14 years (176 per 100,000). The difference between boys and girls was largest for young children, with boys aged 0–4 years having a hospitalisation rate 1.6 times as high (2,033 per 100,000) as girls of the same age (1,251 per 100,000).

Figure 2: Asthma hospitalisation rates, children aged 0–14 years, by age group and sex, 2018 (crude rate per 100,000)

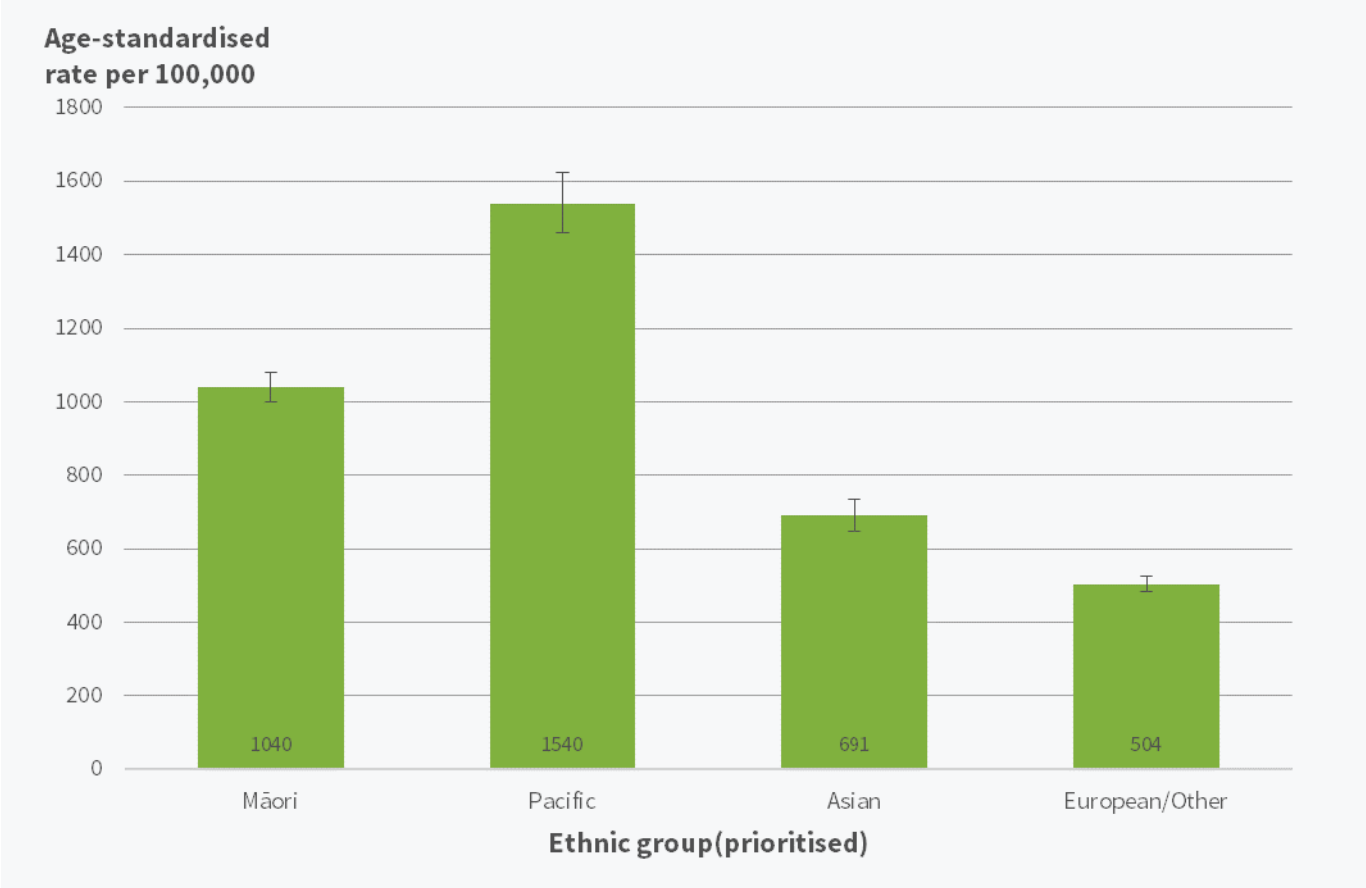


Source: National Minimum Dataset

Pacific and Māori children have higher asthma hospitalisation rates

Asthma hospitalisation rates were highest among Pacific and Māori children compared with Asian and European/Other children, after controlling for age (Figure 3). Pacific children were three times (1,540 per 100,000), and Māori children were two times (1,040 per 100,000) as likely to be hospitalised for asthma as European/Other (504 per 100,000) children.

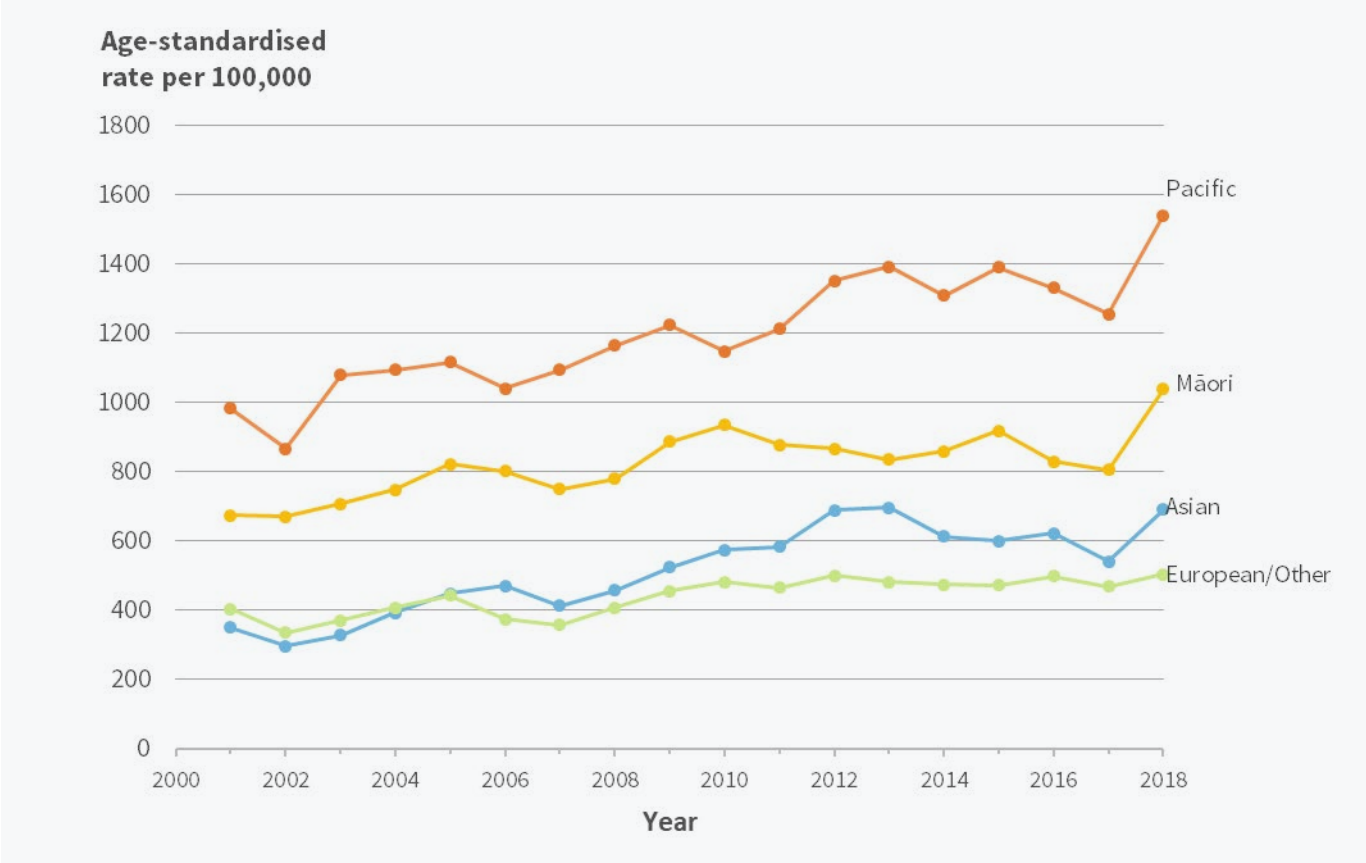
Figure 3: Asthma hospitalisation rates, children aged 0–14 years, by prioritised ethnic group, 2018 (age-standardised rate per 100,000)



Source: National Minimum Dataset

The overall rate of asthma hospitalisations increased steadily for all ethnic groups from 2002 to 2018 (Figure 4). However, the asthma hospitalisation rates for Māori, Asian and Pacific children increased sharply between 2017 to 2018 in contrast to the rate for European/Other children. Māori children had the greatest increase of 29% (805 per 100,000 to 1,039 per 100,000), followed by Asian (28%, 541 per 100,000 to 691 per 100,000) and Pacific children (22%, 1256 per 100,000 to 1540 per 100,000). European/Other children also increased during this period but to a lesser degree (increased by 7%).

Figure 4: Asthma hospitalisation rates, children aged 0–14 years, by prioritised ethnic group, 2001–2018 (age-standardised rate per 100,000)



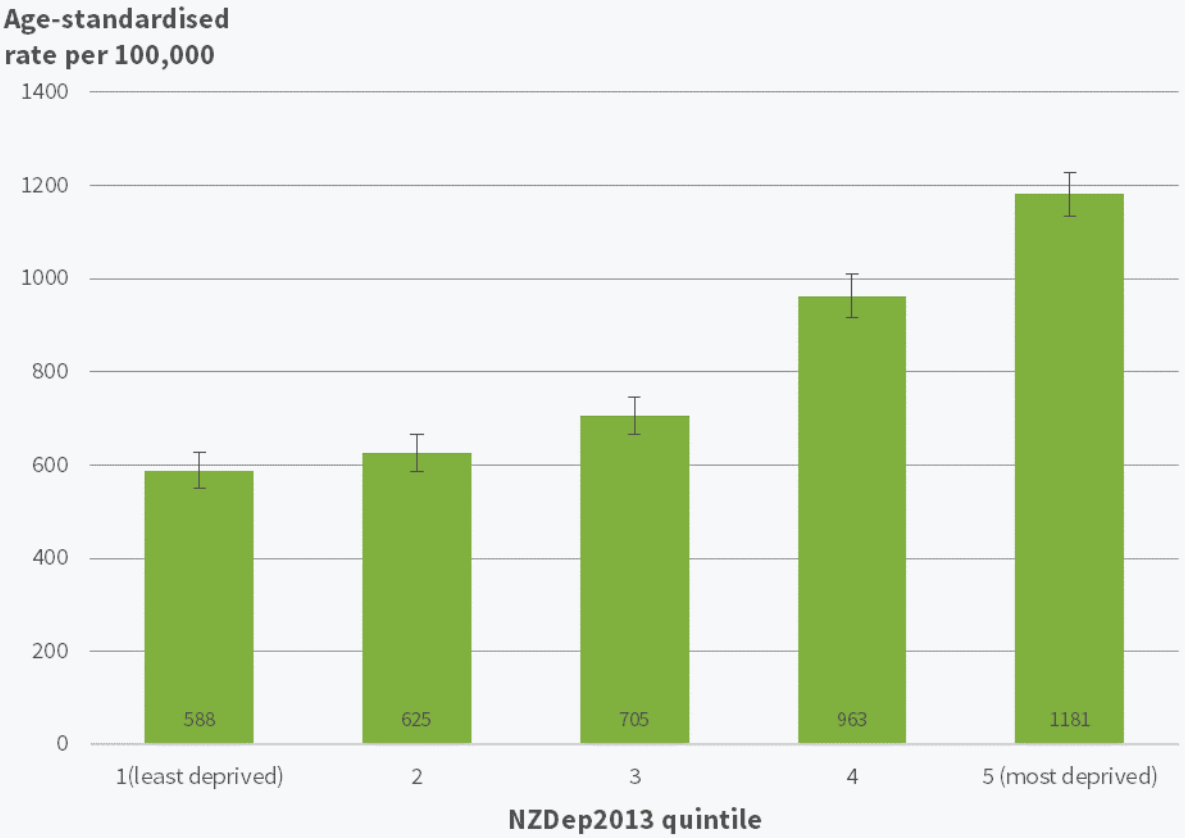
Source: National Minimum Dataset

Higher asthma hospitalisation rates for children in high deprivation areas

In 2018, the asthma hospitalisation rate was higher for children living in the most deprived areas (NZDep 2013 quintile 5) (1,181 per 100,000) than those in the least deprived areas (quintile 1) (588 per 100,000), after adjusting for age.

Children living in the most deprived areas were two times as likely to be hospitalised for asthma as children in the least deprived areas (adjusted rate ratio 2, 95% confidence interval 1.86–2.16).

Figure 5: Asthma hospitalisation rates, children aged 0–14 years, by NZDep 2013 quintiles, 2018 (age-standardised rate per 100,000)



Source: National Minimum Dataset

Highest rates of asthma hospitalisation in Auckland, Lakes, Taranaki and Hutt Valley DHBs

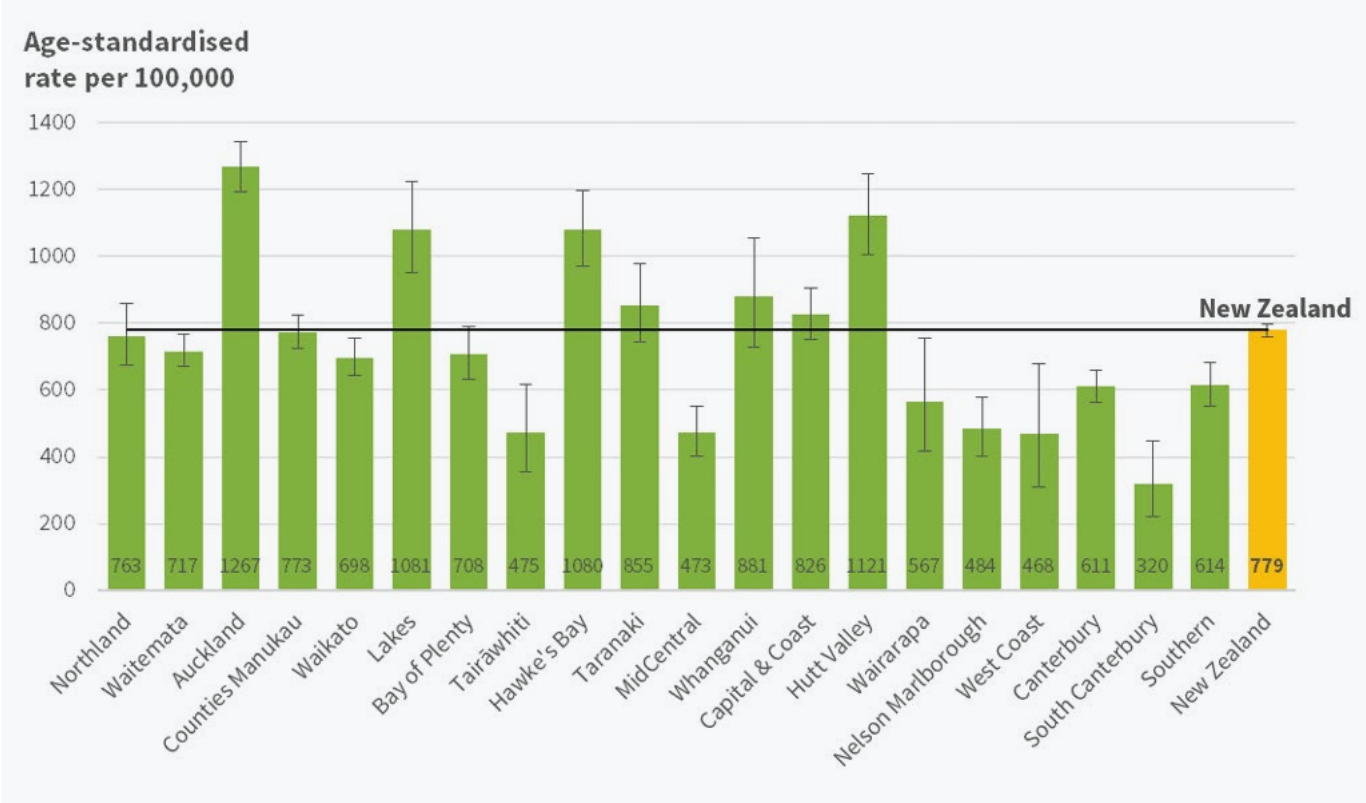
In 2018, there were substantial regional differences in children's asthma hospitalisation rates. The following DHBs had the highest rates of asthma hospitalisation for children compared to the national rate (Figure 6):

- Auckland (1,267 per 100,000)
- Hutt Valley (1,121 per 100.000)
- Lakes (1,081 per 100,000)
- Hawke's Bay (1,080 per 100,000)

The lowest asthma hospitalisation rates were in:

- South Canterbury (320 per 100,000)
- MidCentral (473 per 100,000)
- Tairāwhiti (475 per 100,000)

Figure 6: Asthma hospitalisation rates, children aged 0–14 years, by District Health Board, 2018 (age-standardised rate per 100,000)



Source: National Minimum Dataset

Data for this indicator

Data comes from the National Minimum Dataset, produced by the Ministry of Health. The indicator presents data for acute and semi-acute hospitalisations with asthma (ICD-10-AM J45–J46) or wheeze (R06.2) as the primary diagnosis. Including wheeze is consistent with the approach used by Child Youth and Epidemiology Service (Simpson et al 2017) and Health Quality and Safety Commission (HQSC 2016), to account for paediatricians increasingly diagnosing wheeze instead of asthma, particularly for young children. Analyses excluded overseas visitors, deaths and transfers within and between hospitals. Day cases and emergency department short stays (longer than three hours) have been included, as this is considered to be the best approach for having regional consistency in childhood hospitalisations for medical reasons (HQSC, 2016).

Age-standardised rates have been presented, to account for differences in age structure of population groups. Unless otherwise stated, all differences mentioned in the text between two values are statistically significant at 5% level or less. For additional information, see the metadata link below.

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Health burden due to second-hand smoke exposure

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Further information

For descriptive information about the data **Metadata Sheet**

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