

Lower respiratory tract infection hospitalisations (0–4 years)

This report presents an analysis of the most recent data (calendar year 2024) on lower respiratory tract infection (LRTI) hospitalisations among children aged 0–4 years in Aotearoa New Zealand, provided to EHINZ by Health New Zealand- Te Whatu Ora in December 2025.

Key facts

- The number of LRTI hospitalisations among 0–4 year olds increased from 10159 in 2023 to 10825 in 2024.
- The pattern of LRTI hospitalisations being highest during winter remained, but some summer months remain higher than pre-pandemic.
- Infants (under one year old) continue to have the highest LRTI hospitalisation rates.
- Pacific children had more than three times the rate of LRTI hospitalisations as European/Other children in 2024.

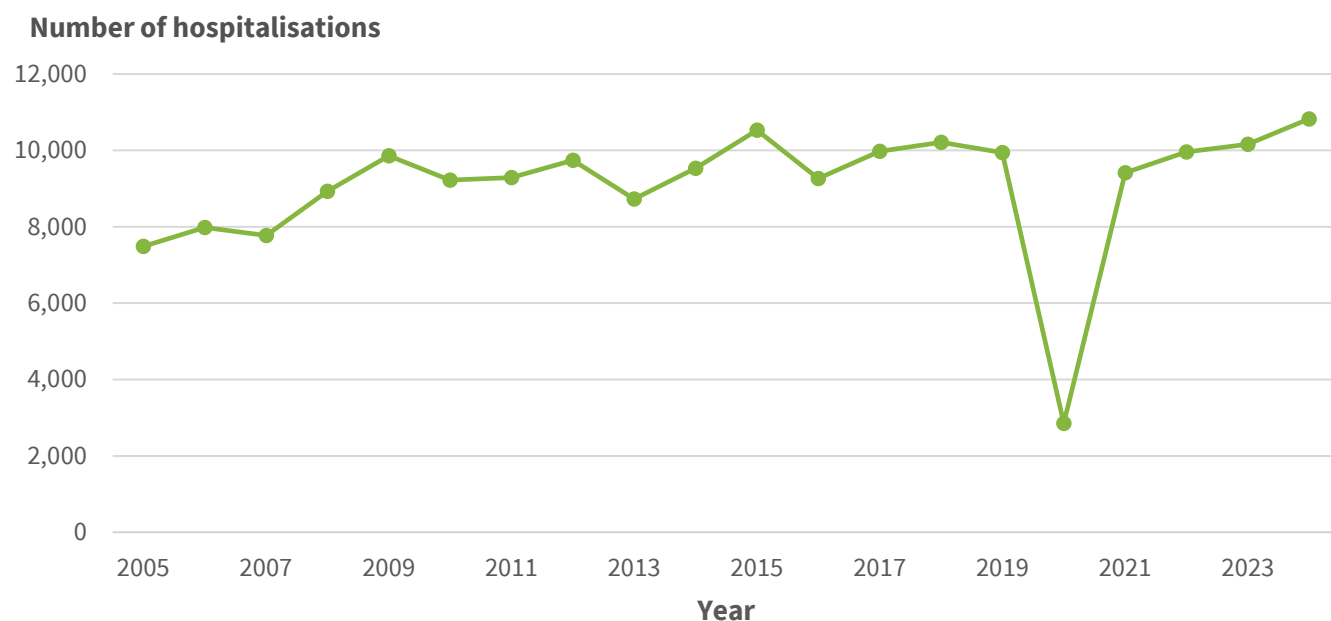
Poor indoor and outdoor air quality increases the risk of lower respiratory tract infections among children

Lower respiratory tract infections (LRTI) refer to infections of the windpipe (trachea), lungs, and airways (bronchi, bronchioles). These include pneumonia, bronchitis, and bronchiolitis. Household crowding, second-hand smoke exposure (Baker et al 2013; U.S. Department of Health and Human Services 2007), and outdoor air pollution (Mehta et al 2013) increase the risk of lower respiratory tract infections in young children. Compared with other developed countries, New Zealand has high rates of LRTI hospitalisation among young children (Trenholme et al 2013). For more background information, please visit our [website](#).

LRTI hospitalisations in children under five reached a 20-year high in 2024

In 2024, hospitalisations due to LRTI in children under five reached 10825, 6.6% higher than the 10159 hospitalisations recorded in 2023. This is the highest number recorded in the past two decades. Hospitalisations dropped sharply in 2020 during the COVID-19 pandemic, but numbers have now returned to pre-pandemic levels (Figure 1).

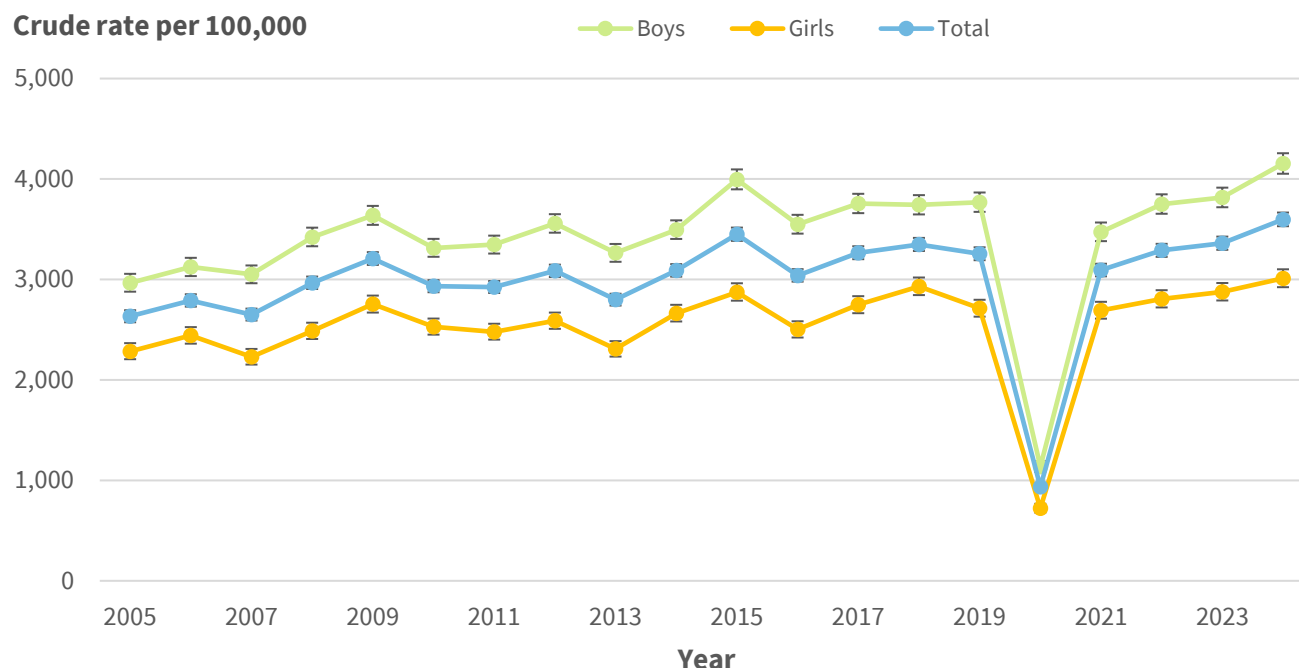
Figure 1: Number of lower respiratory tract infection hospitalisations in children aged 0–4 years, 2005–2024



Source: National Minimum Dataset, Ministry of Health 2025

The hospitalisation rate for LRTI increased slightly from 3360.5 hospitalisations per 100,000 (95%CI 3295.4–3426.5) in 2023 to 3597.5 per 100,000 (95%CI 3530.1–3666.0) in 2024. The significantly lower rate in 2020 coincided with the onset of the nationwide COVID-19 lockdown on March 25, 2020. Following this decline, hospitalisation rates gradually increased from 2021 onward, with a more noticeable rise in 2024 for boys, girls, and the total population. Hospitalisation rates have reverted to levels comparable to those seen before the pandemic. Throughout the entire period, boys have consistently had higher LRTI hospitalisation rates than girls (Figure 2).

Figure 2: Lower respiratory tract infection hospitalisations in children aged 0–4 years, by sex, 2005–2024 (crude rate per 100,000)

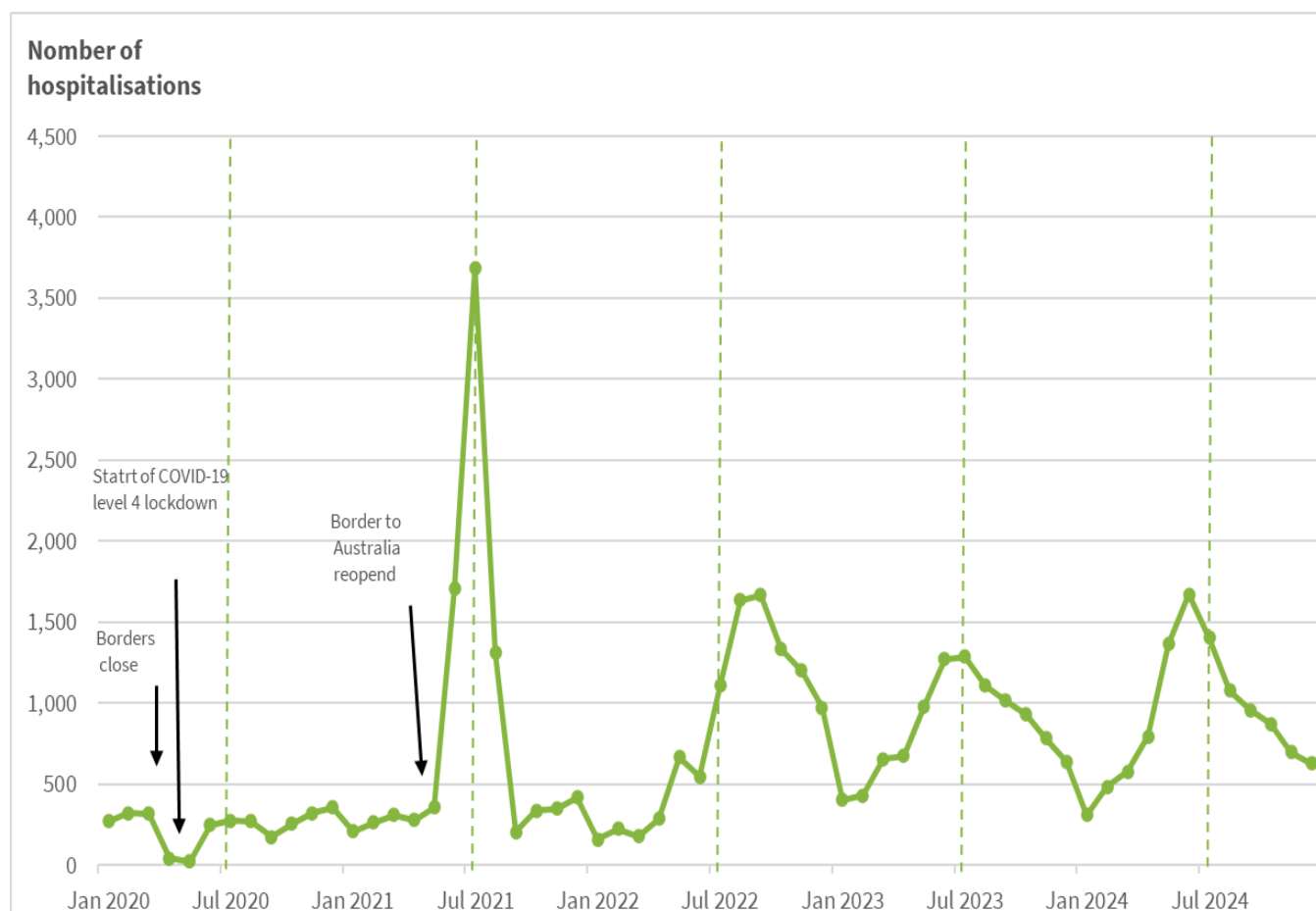


Note: 95% confidence intervals have been presented as vertical bars.
Source: National Minimum Dataset, Ministry of Health 2025

LRTI seasonality has stabilised, though summer levels are higher than pre-COVID-19

The usual seasonal pattern for LRTI hospitalisations was disrupted in 2020 and 2021 while the country managed the COVID-19 pandemic. It is thought that one driver of the higher LRTI hospitalisations in 2021 was lower than usual levels of immunity among young children to respiratory syncytial virus (RSV) due to the reduced incidence of RSV and other seasonal viruses in 2020 (Britton et al 2020; Groves et al 2021). Border changes in April 2021 allowed quarantine-free travel between New Zealand and Australia, and RSV cases quickly increased, peaking in July 2021 (Hatter et al 2021). Winter peaks have largely returned to their usual levels in 2022, 2023, and 2024. However, hospitalisations during some summer months have been higher than those observed before the pandemic (Figure 3).

Figure 3: Number of lower respiratory tract infection hospitalisations in children aged 0–4 years, by month, 2020–2024

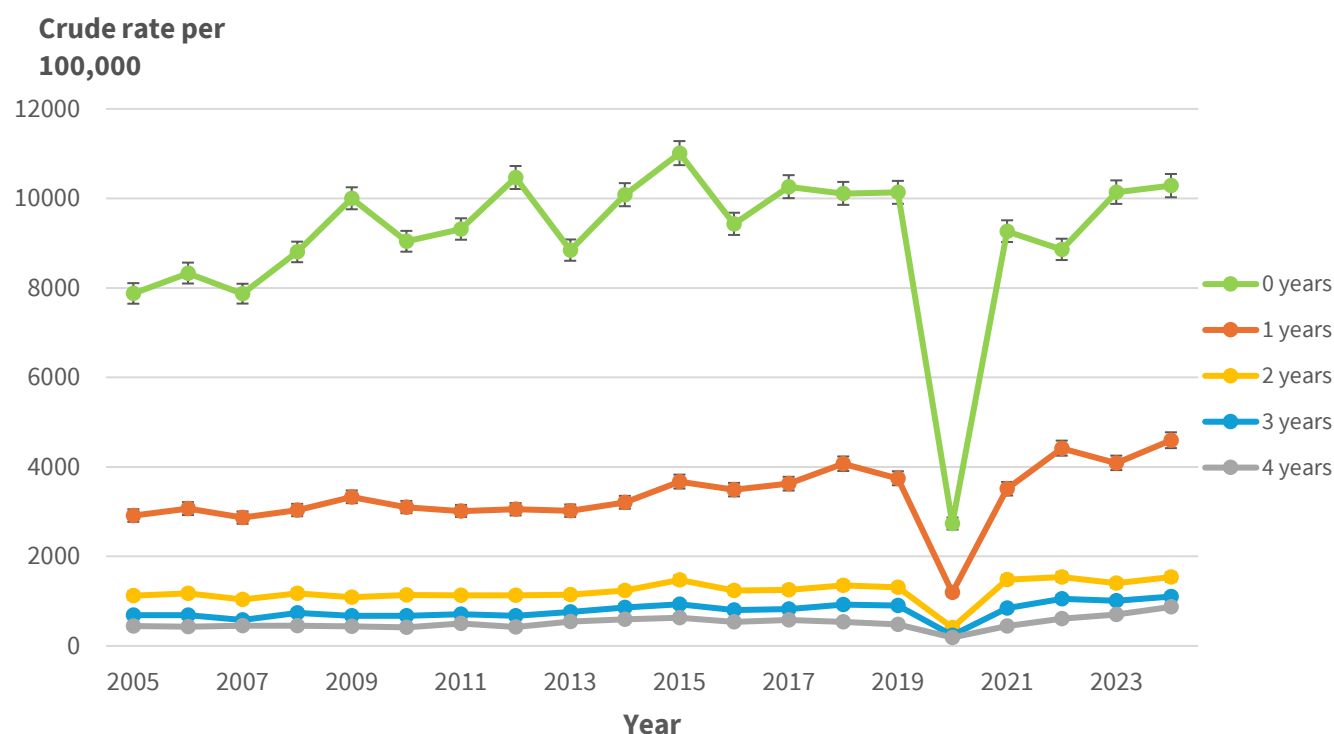


Source: National Minimum Dataset, Ministry of Health 2025

Infants continued to have the highest LRTI hospitalisation rates

In 2024, infants (under one-year-old) had the highest rate (10282.6 per 100,000; 95%CI 10024.9–10545.2) of LRTI hospitalisations compared to children aged 1–4 years (Figure 4). The rate for 1-year-olds in 2024 was 4594.4 per 100,000 (95%CI 4420.2–4773.7), the highest recorded rate for this age group in the past two decades.

Figure 4: Lower respiratory tract infection hospitalisations in children aged 0–4 years, by age, 2005–2024 (crude rate per 100,000)



Note: 95% confidence intervals have been presented as vertical bars.
Source: National Minimum Dataset, Ministry of Health 2025

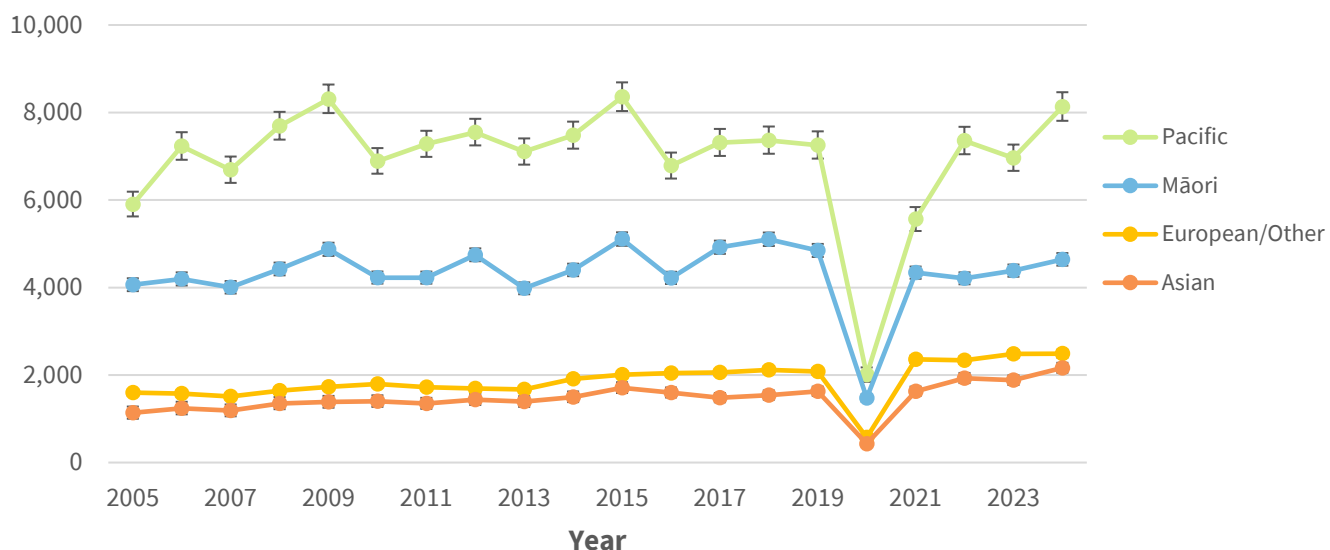
Pacific and Māori children were disproportionately affected by LRTI

Rates of LRTI hospitalisation for Pacific and Māori children have been consistently higher than those for European/Other and Asian children (Figure 5). In 2024, the LRTI hospitalisation rate was more than three times as high for Pacific children aged 0–4 years (8132.0 per 100,000; 95%CI 7810.1–8463.8) than for European/Other children (2487.8 per 100,000; 95%CI 2398.9–2579.1) and nearly four times higher than for Asian children (2163.3 per 100,000; 95%CI 2051.7–2979.3).

The hospitalisation rate for Pacific children in 2024 increased by 16.8% compared with 2023, reaching the highest level after the COVID-19 pandemic. With the protective measures used for the initial COVID-19 response gone, LRTI hospitalisation rates and associated disparities returned to pre-pandemic levels.

Figure 5: Lower respiratory tract infection hospitalisations in children aged 0–4 years, by ethnic group (prioritised), 2005–2024 (crude rate per 100,000)

Crude rate per

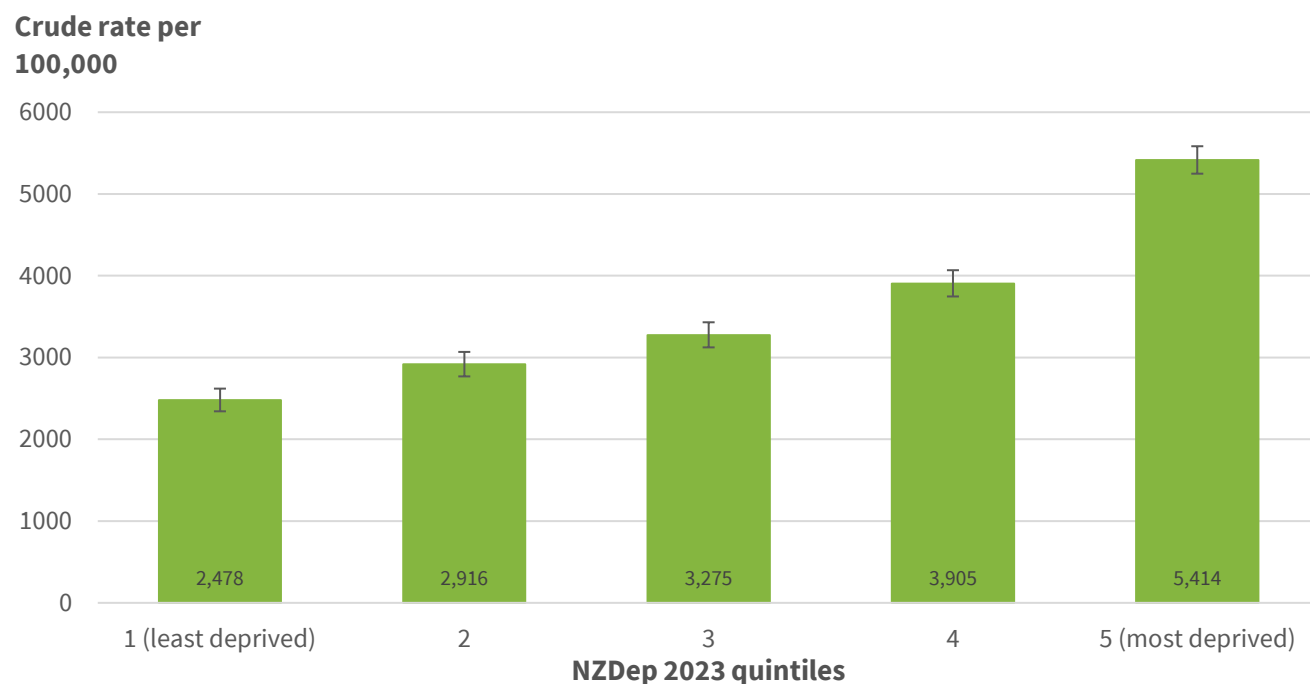


Note: 95% confidence intervals have been presented as vertical bars.
Source: National Minimum Dataset, Ministry of Health 2025

LRTI hospitalisation rates increased with deprivation

In 2024, LRTI hospitalisation rates increased consistently across deprivation levels (Figure 6). Children living in the most deprived areas (NZDep2023 quintile 5) had more than twice the rate of LRTI hospitalisation than children living in the least deprived areas (quintile 1) (rate ratio=2.18, 95%CI 2.05–2.33).

Figure 6: Lower respiratory tract infection hospitalisations in children aged 0–4 years, by NZDep 2023 quintiles, 2024 (crude rate per 100,000)



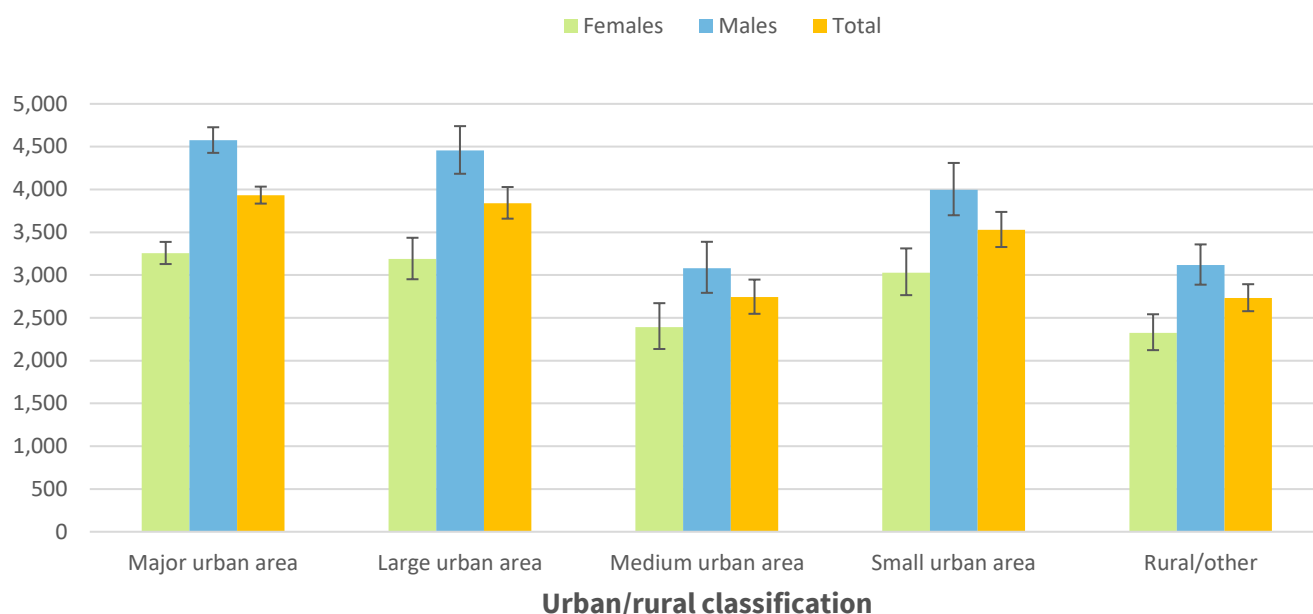
Note: 95% confidence intervals have been presented as vertical bars.

Source: National Minimum Dataset, Ministry of Health 2025

Higher LRTI hospitalisation rates in urban areas

LRTI hospitalisation rates for 2024 were higher for children living in the major urban areas (3932.6 per 100,000; 95%CI 3834.4–4032.7) than for children living in rural areas (2731.5 per 100,000; 95%CI 2577.3–2892.6). Across all urban and rural categories, males had a noticeably higher rate of LRTI hospitalisation than females (Figure 7).

Figure 7: Lower respiratory tract infection hospitalisations in children aged 0–4 years, by urban/rural classification, 2024 (crude rate per 100,000)

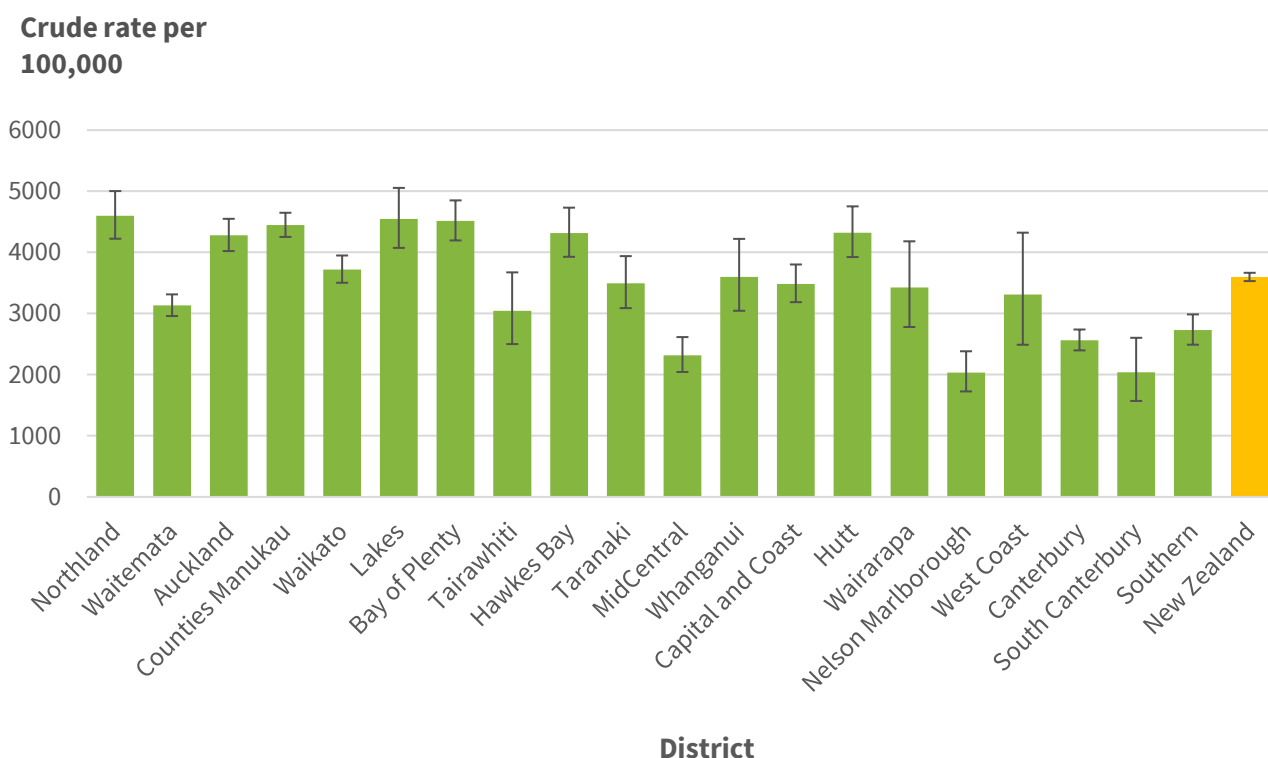


Notes: 95% confidence intervals have been presented as vertical bars. The Statistics NZ urban-rural classification for 2023 has been used. Major urban areas are major towns and cities with a population of 100,000 or more. Large urban areas are smaller centres with a population of 30,000–99,999. Medium urban areas are towns with a population of 10,000–29,999. Small urban areas are towns with a population of 1,000–9,999. Rural areas include rural centres and surrounding rural areas.
Source: National Minimum Dataset, Ministry of Health 2025

High LRTI hospitalisation rates in Northland, Lakes, and Bay of Plenty

In 2024, rates of LRTI hospitalisation varied widely across districts. Northland, Lakes, and Bay of Plenty had relatively high rates, all exceeding 4,500 per 100,000, while Nelson Marlborough and South Canterbury had the lowest rates, below 2,100 per 100,000 (Figure 8).

Figure 8: Lower respiratory tract infection hospitalisations in children aged 0–4 years, by district, 2024 (crude rate per 100,000)



Notes : 95% confidence intervals have been presented as vertical bars. Districts refer to areas formerly known as District Health Boards (DHBs).
Source: National Minimum Dataset, Ministry of Health 2025

Further results by territorial authority can be accessed using the [Indoor Environment domain dashboard](#).

Data for this indicator

Data for this indicator comes from the National Minimum Dataset, published by the Ministry of Health. The indicator reports on LRTI hospitalisations among children aged 0–4 years with a primary diagnosis in the following ICD-10AM codes:

- pneumonia (J12, J13, J14, J15, J16, J18)
- bronchitis (J20)
- bronchiolitis (J21)
- unspecified acute lower respiratory tract infection (J22).

For additional information, see the [Metadata](#) sheet.

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Citation

Environmental Health Intelligence. 2026. *Lower respiratory tract infection hospitalisations (0–4 years)* [Surveillance Report]. Wellington: Environmental Health Intelligence NZ, Massey University.

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