Meningococcal notifications in children (0–14 years)

This report presents statistics on meningococcal notifications for children aged 0–14 years in New Zealand.

Key facts

- The rate of meningococcal notifications increased slightly from 1.6 per 100,000 in 2020, to 2.6 per 100,000 notifications in 2021.
- Meningococcal B continues to be the most dominant strain in children aged 0–14 years.
- Infants (under 1-year-old) continue to have the highest rate of meningococcal disease since 2001. They had 58 times the rate of meningococcal disease as children aged 10–14 years.
- Māori and Pacific children had three to four times the rate of meningococcal disease than European/Other children.
- Children living in the most deprived areas (NZDep 2018 quintile 5) had five times the rate of meningococcal disease as children living in the least deprived areas (quintile 1).

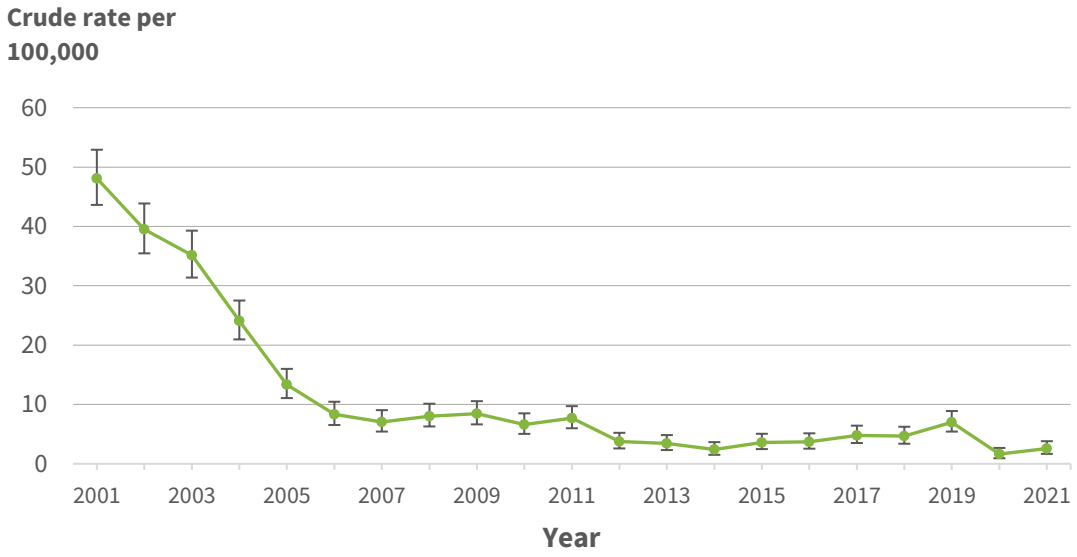
Household crowding and second-hand smoke exposure increase the risk of meningococcal disease

Meningococcal disease is a serious infection which can cause meningitis (an infection of membranes that covers the brain), septicaemia (blood poisoning), and even death. Household crowding increases the risk of meningococcal disease, particularly in those aged 0–16 years (Baker et al 2013). Notably, in 2018, 10.8% of New Zealanders (431,000 people) lived in a crowded household (Statistics NZ 2020). Second-hand smoke exposure is also associated with an increased risk of meningococcal disease in children (Lee et al 2010; Murray et al 2012).

Meningococcal disease notifications show a slight increase in 2021

In 2021, the number of meningococcal disease notifications among children aged 0–14 years slightly increased from 16 notifications (1.6 per 100,000; 95%CI 0.9–2.7) in 2020 to 25 notifications (2.6 per 100,000; 95%CI 1.7–3.8) in 2021 (Figure 1). While this increase is small, the overall rate remains relatively low compared to the years before the COVID-19 pandemic.

Figure 1: Meningococcal disease notification rate in children aged 0–14 years, 2001–2021 (crude rate per 100,000 population)

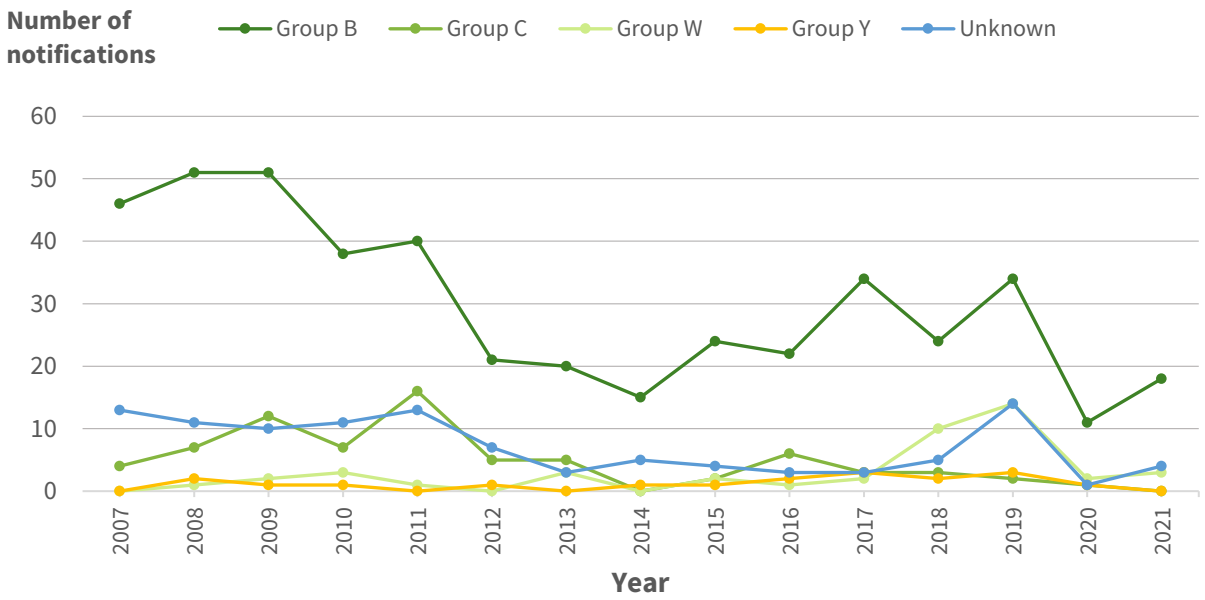


Note: 95% confidence intervals have been presented as vertical bars.
Source: EpiSurv, ESR 2023

Meningococcal Group B continues to be the most dominant strain in children

Since 2007, Group B has consistently accounted for the majority of meningococcal disease notifications in children. In 2021, Group B was responsible for over 70% of these notifications (Figure 2). Since mid-2017, there has been a sudden increase in Group W meningococcal disease (MenW) in New Zealand, which was then followed by subsequent decrease in 2020.This strain affects all age groups and is associated with high case fatality rates (Beehive 2018). Following a decline in 2020, there has been an increase in notifications, particularly in Group B. However, the number of notifications remains lower than pre-COVID-19 levels.

Figure 2: Number of meningococcal disease notifications in children aged 0–14 years, by serotype, 2001–2021

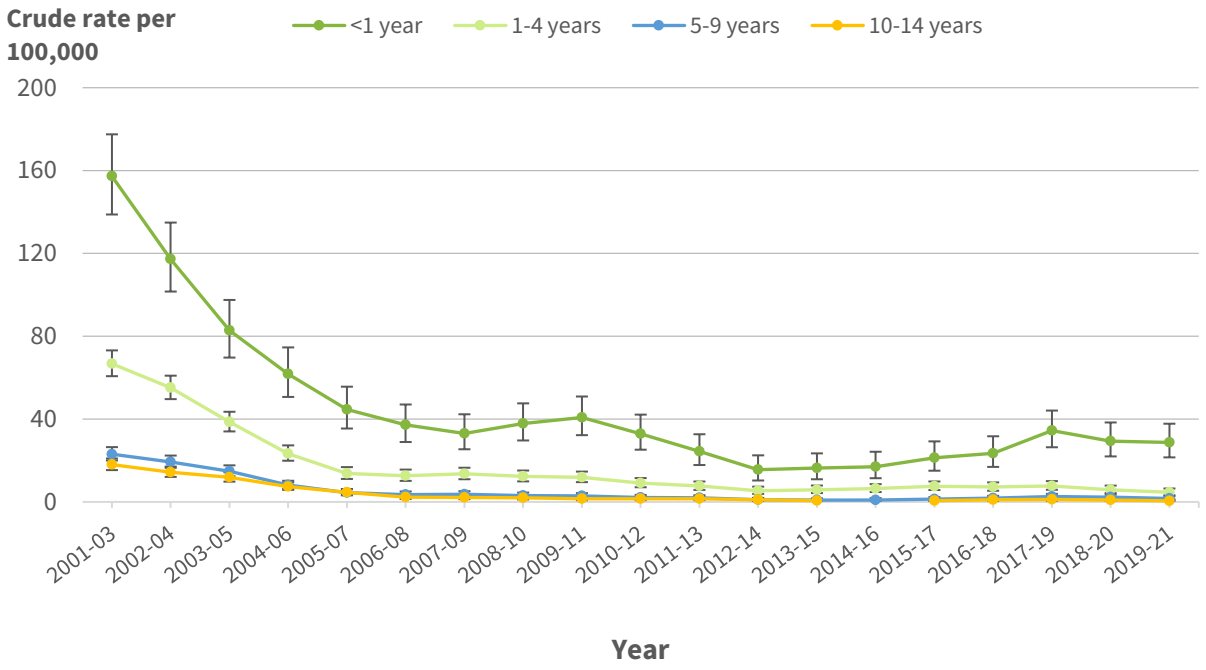


Note: Serotype data is only available from 2007 onwards. There was only one notification for Group E between 2007 and 2021.
Source: EpiSurv, ESR 2023

Infants continue to have the highest rate of meningococcal disease

From 2001 until 2021, infants (under one-year-old) consistently had the highest notification rates of meningococcal disease compared to the older age groups (Figure 3). In 2019–21, the rate of meningococcal disease among infants (28.8 per 100,000; 95%CI 21.5–37.8) was 58 times higher than the rate for children aged 10–14 years (0.5 per 100,000; 95%CI 0.2–1.2).

Figure 3: **Meningococcal disease notification rate in children aged 0–14 years, by age group, three-year moving averages, 2001–2021 (crude rate per 100,000 population)**

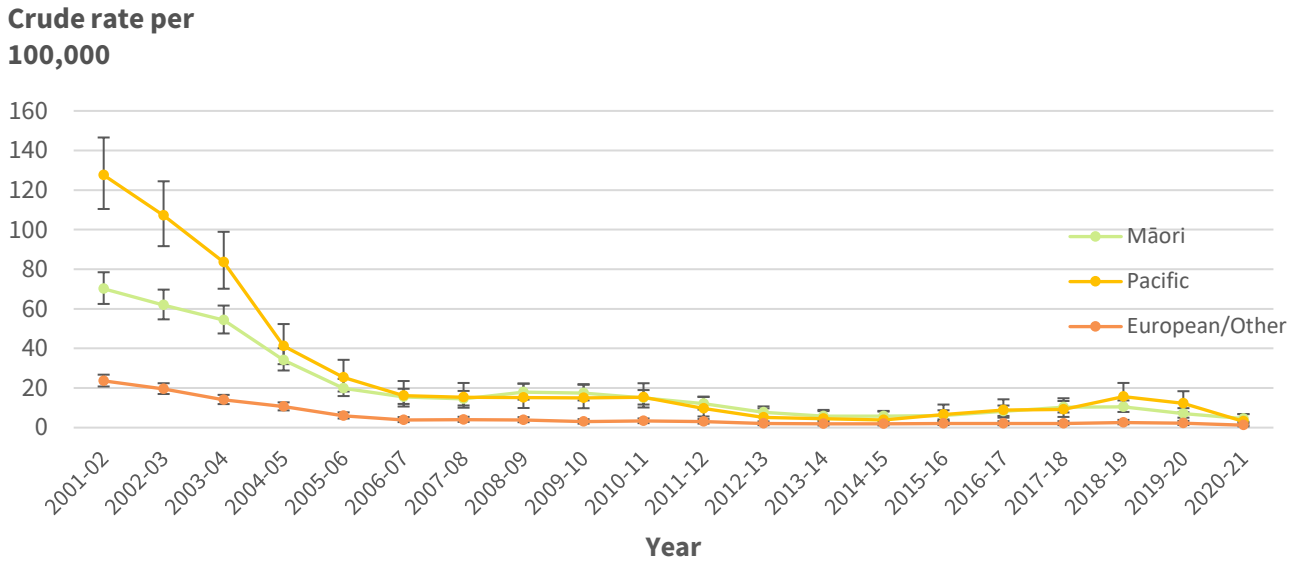


Note: 95% confidence intervals have been presented as vertical bars.
Source: EpiSurv, ESR 2023

Pacific and Māori children were disproportionately affected by meningococcal disease

Since 2001, Pacific and Māori children continued to have the highest rates of meningococcal disease (Figure 4). In 2020–21, the meningococcal rate was nearly four times higher in Māori (4.6 per 100,000; 95%CI 2.9–6.8) than in European/Other children (1.2 per 100,000; 95%CI 0.6–2.2). Additionally, the rate in Pacific children (3.2 per 100,000; 95%CI 1.2–6.9), was almost three times higher than that observed in European/Other children.

Figure 4: **Meningococcal disease notification rate in children aged 0–14 years, by ethnic group (prioritised), two-year moving averages, 2001–2021 (crude rate per 100,000 population)**

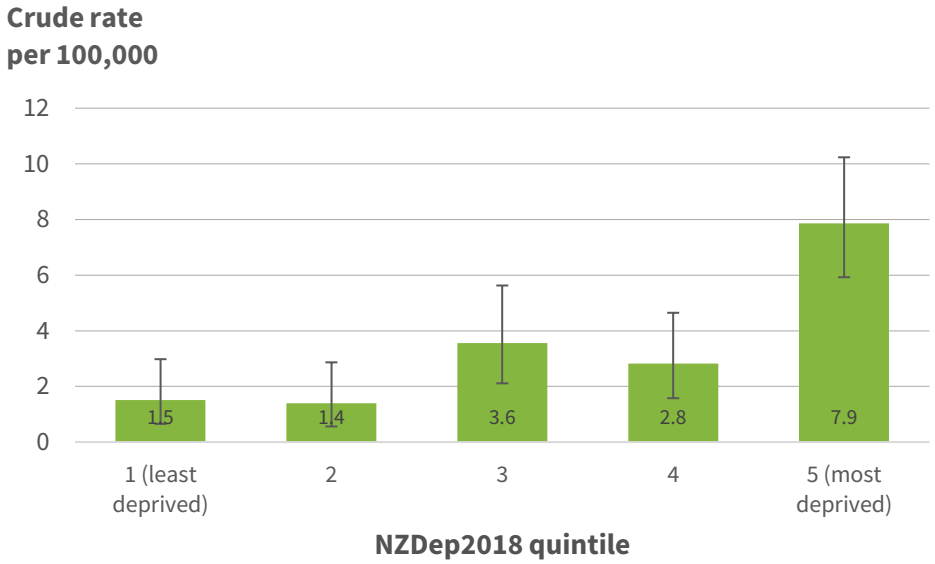


Note: 95% confidence intervals have been presented as vertical bars. The rate is suppressed for Asian children due to an unreliable estimate with small numbers.
Source: EpiSurv, ESR 2023

Higher meningococcal disease notification rates in more socioeconomically deprived areas

In 2019–21, the meningococcal disease notification rate for children living in the most socioeconomically deprived (NZDep 2018 quintile 5) areas (7.9 per 100,000; 95% CI 5.9–10.2) was higher than those living in the least deprived areas (quintile 1) (1.5 per 100,000; 95%CI 0.7–3.0) (Figure 5). Children living in the most deprived areas had five times the rate of meningococcal disease as children living in the least deprived areas.

Figure 5: **Meningococcal disease notification rate in children aged 0–14 years, by NZDep2018 quintiles, 2019–21 (crude rate per 100,000 population)**

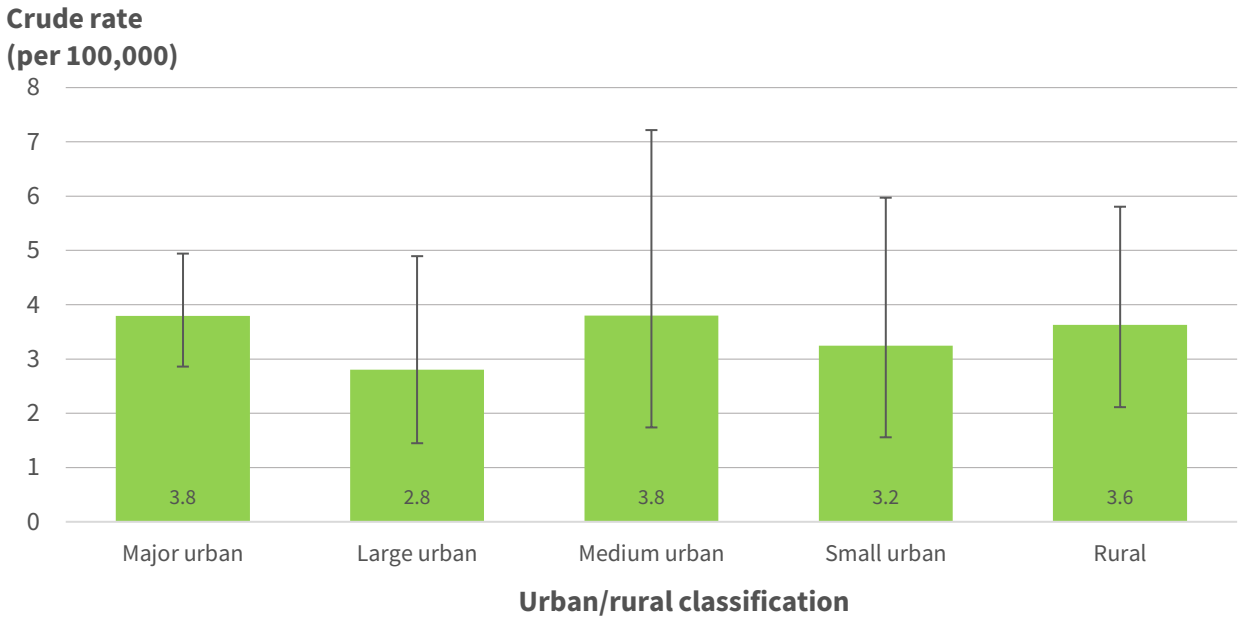


Note: 95% confidence intervals have been presented as vertical bars.
Source: EpiSurv, ESR 2023

Meningococcal disease notification rates were similar across urban/rural areas

In 2019–21, there were no major differences in the notification rates of meningococcal disease in children by urban/rural classification (Figure 6).

Figure 6: Meningococcal disease notification rate in children aged 0–14 years, by urban/rural classification, 2019–21 (crude rate per 100,000 population)

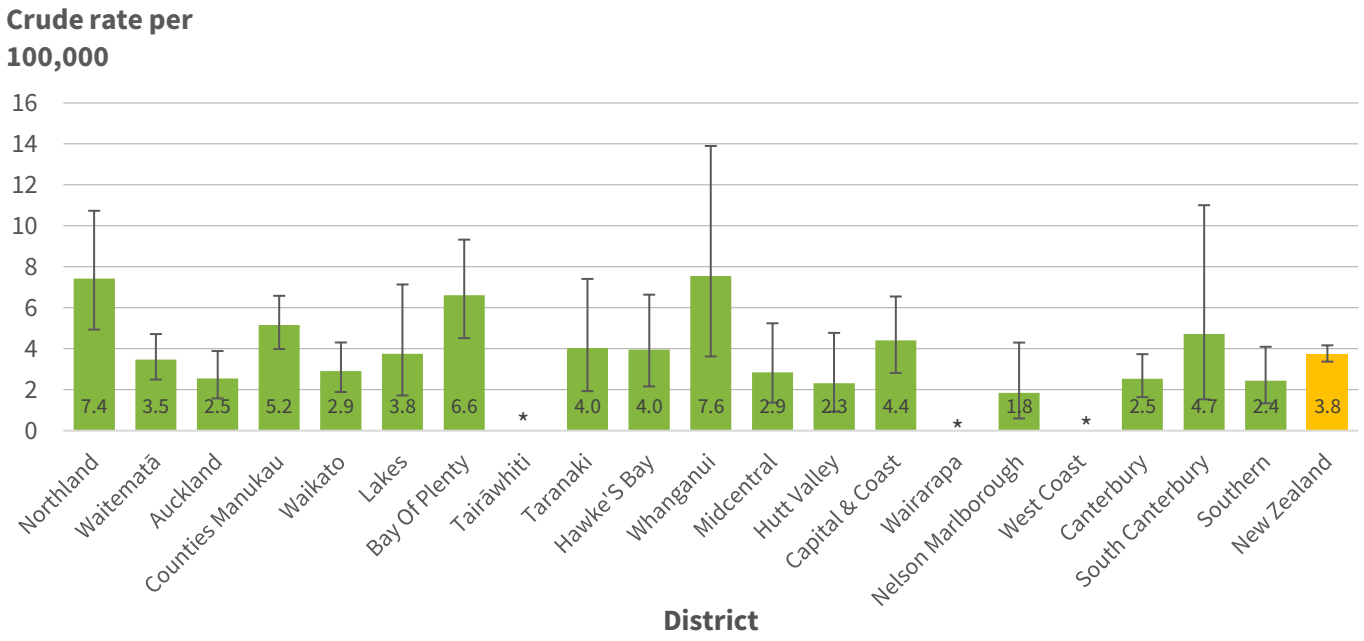


Note 1: 95% confidence intervals have been presented as vertical bars.
Note 2: The Statistics New Zealand urban-rural classification for 2018 has been used. Major urban areas are major towns and cities with a population of 100,000 or more. Large urban areas are larger towns and cities with a population of 30,000–99,999 people. Medium urban areas are towns with a population of 10,000–29,999 people. Small urban areas are smaller towns with a population of 1,000–9,999. Rural areas include rural centres, (less than 1,000 residents) and rural areas outside of these.
Source: EpiSurv, ESR 2023

High meningococcal disease rates in the Whanganui and Northland districts

In the ten years 2012–21, children living in the Whanganui and Bay of Plenty districts had high meningococcal disease rates (Figure 7).

Figure 7: Meningococcal disease notification rate in children aged 0–14 years, by district, 2012–21 (crude rate per 100,000 population)



Note: 95% confidence intervals have been presented as vertical bars. *The rate is suppressed for Tairāwhiti, Wairarapa, and West Coast districts due to counts less than five.
Source: EpiSurv, ESR 2023

Data for this indicator

This indicator is an analysis of the most recent data available from the EpiSurv notifications surveillance database, provided to EHINZ by the Institute of Environmental Science Research (ESR) in April 2023.

Notifications only cover those people who visited a GP or received hospital treatment, and therefore may underestimate the true rate of disease in the population.

For additional information, see the Metadata sheet.

References

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