Meningococcal disease notifications (0–14 years), 2007–2016

HIGHLIGHTS

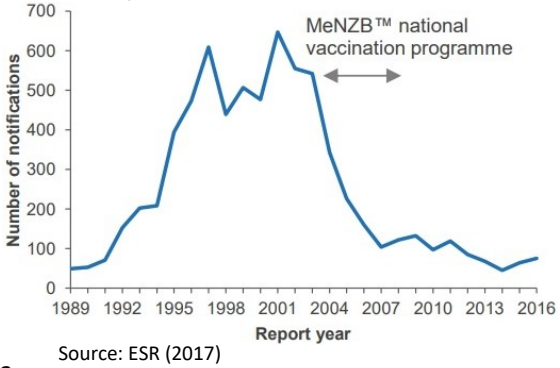
- **In 2016, there were 35 notifications of meningococcal disease in children aged 0–14 years in New Zealand.**
- **The number of meningococcal disease notifications in children had increased since 2014 (22 notifications).**
- **The majority of meningococcal disease notifications were in children aged 0–4 years. Notification rates were much higher for Māori and Pacific children, and children living in the most deprived areas (NZDep2013 quintile 5).**
- **In 2007–16, Hawke's Bay and Northland District Health Boards had the highest notification rates of meningococcal disease.**

How meningococcal disease is related to the indoor environment

Meningococcal disease is a serious bacterial infection, which can cause meningitis and septicaemia (blood poisoning), and even death. Although there are several different groups of meningococcal bacteria, groups B and C are more likely to cause disease in New Zealand (ESR, 2014). Household crowding increases the risk of meningococcal disease, particularly in those aged 0–16 years (Baker et al, 2013). Second-hand smoke exposure is also associated with an increased risk of meningococcal disease in children (Lee et al, 2010; Murray et al, 2012). This factsheet has therefore focussed on children aged 0–14 years.

In New Zealand, there was a meningococcal group B disease outbreak from 1995–2004 (Figure 1), which mostly affected children and young people (Martin & Lopez, 2009). National rates dramatically decreased from 2004 onwards after a nationwide vaccination programme for those aged 0–19 years.

Figure 1: Total number of meningococcal disease notifications, 1989–2016



Source: ESR (2017)

Data for this indicator

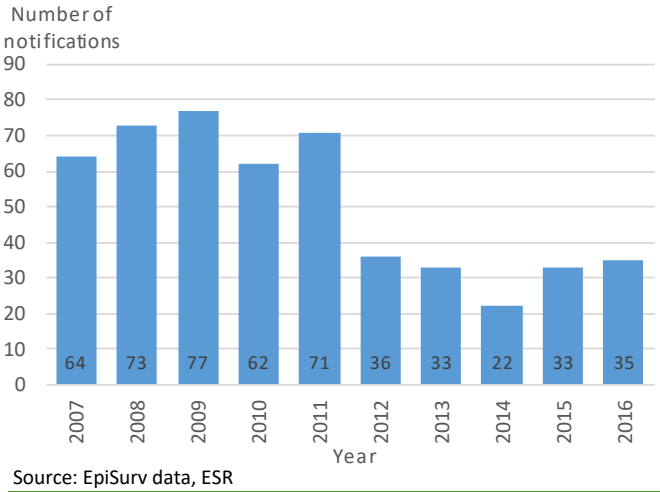
This indicator presents meningococcal notifications for children aged 0–14 years, from EpiSurv data from ESR, from 2007 to 2016. Results are presented by year, sex, age group, ethnic group, socioeconomic deprivation (NZDep2013 quintiles), urban/rural classification, and District Health Board (DHB), as well as serogroup. Rates are presented per 100,000 children (or 100,000 children per year, when multiple years of data have been combined).

Increases in notifications of meningococcal disease from 2014 to 2016

In 2016, there were 35 notifications of meningococcal disease among children aged 0–14 years in New Zealand. The annual number of notifications for children had increased from 22 notifications in 2014 (Figure 2).

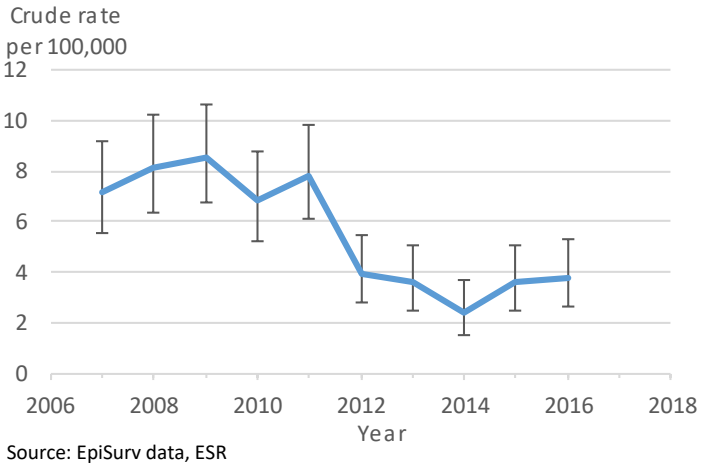
The notification rate of meningococcal disease decreased from 2009 (8.5 per 100,000) to 2014 (2.4 per 100,000), and has remained relatively stable since then (3.8 per 100,000 in 2016) (Figure 3).

Figure 2: Number of meningococcal disease notifications in children aged 0–14 years, 2007–2016



Source: EpiSurv data, ESR

Figure 3: Notification rate for meningococcal disease in children aged 0–14 years, 2001–2016 (crude rate per 100,000)



Source: EpiSurv data, ESR

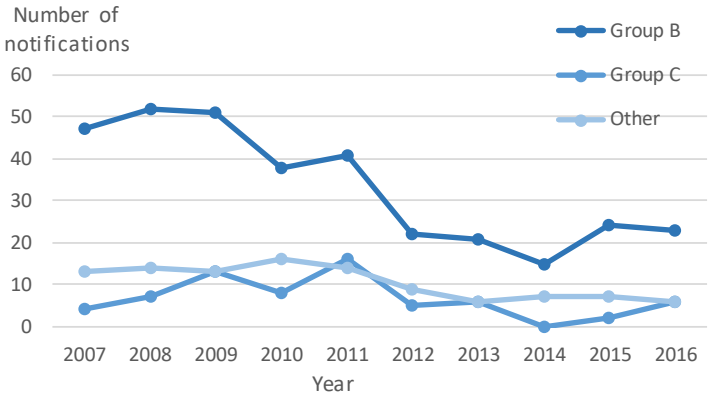
Meningococcal disease notifications (0–14 years)

Most cases of meningococcal disease in children are Group B

In 2016, most notifications of meningococcal disease in children were for group B (23 out of 35 cases), followed by group C (6 cases), group Y (2 cases) and group W (1 case).

Figure 4 shows that the number of notifications of meningococcal group B disease decreased from 52 notifications in 2008 to 23 notifications in 2016.

Figure 4: Number of meningococcal disease notifications in children aged 0–14 years, by serogroup, 2007–2016



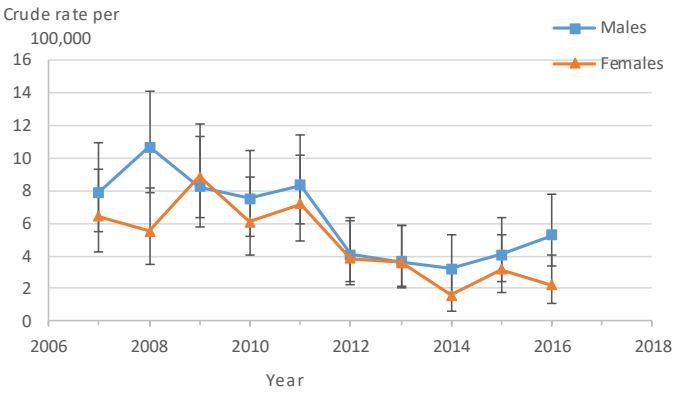
Note: 'Other' includes other serogroups (E, W, Y), non-groupable, other laboratory-confirmed cases, and unknowns.
Source: EpiSurv data, ESR

Boys and girls have similar notification rates for meningococcal disease

In 2016, there were 25 notifications of meningococcal disease in boys, and 10 notifications in girls.

From 2007 to 2016, the meningococcal disease notification rate has mostly been similar for boys and girls, with the exception of 2008, when boys had a significantly higher rate (Figure 5). Both sexes have seen a decrease in the rate of disease since 2009.

Figure 5: Meningococcal disease notification rate in children aged 0–14 years, by sex, 2007–2016 (crude rate per 100,000 population)



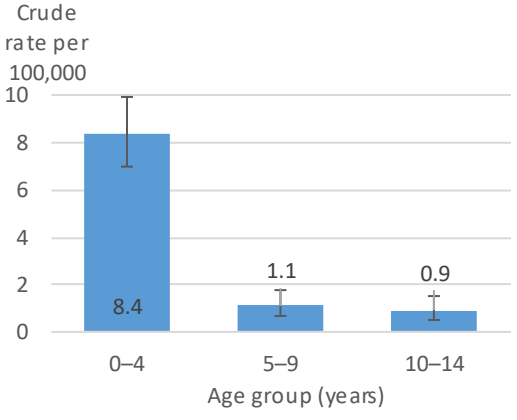
Source: EpiSurv data, ESR

Children aged 0–4 years had the highest meningococcal disease rate

In 2016, the majority of meningococcal disease notifications in children were in 0–4 years olds (28 out of 35 notifications). A further 5 notifications were in children aged 5–9 years, and 2 notifications were in those aged 10–14 years.

In 2012–16, children aged 0–4 years had a notification rate about 8 times higher than the older two age groups (Figure 6).

Figure 6: Meningococcal disease notification rate in children aged 0–14 years, by age group, 2012–16 (crude rate per 100,000 population)



Source: EpiSurv data, ESR

Meningococcal disease notifications (0–14 years)

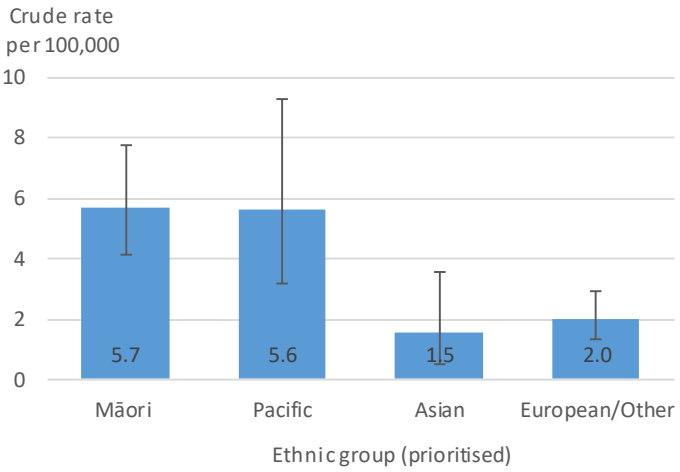
Highest notification rates for Māori and Pacific children

In 2016, there were 13 notifications of meningococcal disease in Māori children, 8 in Pacific children, 3 in Asian children and 11 in European/Other children, based on prioritised ethnic groups.

For the three years 2014–16, Māori and Pacific children had much higher notification rates than Asian and European/Other children (Figure 7). Standardising for age, the notification rates for Māori and Pacific children were 2.5 times as high as the rates for European/Other children.

From 2007–2009 to 2014–16, significant decreases were seen in the disease rates for Māori children (from 16.5 per 100,000 to 5.7 per 100,000) and Pacific children (from 15.3 per 100,000 to 5.6 per 100,000). The rate for European/Other children also decreased over this time (from 3.9 per 100,000 to 2.0 per 100,000).

Figure 7: Meningococcal disease notification rate in children aged 0–14 years, by ethnic group (prioritised), 2014–16 (crude rate per 100,000)



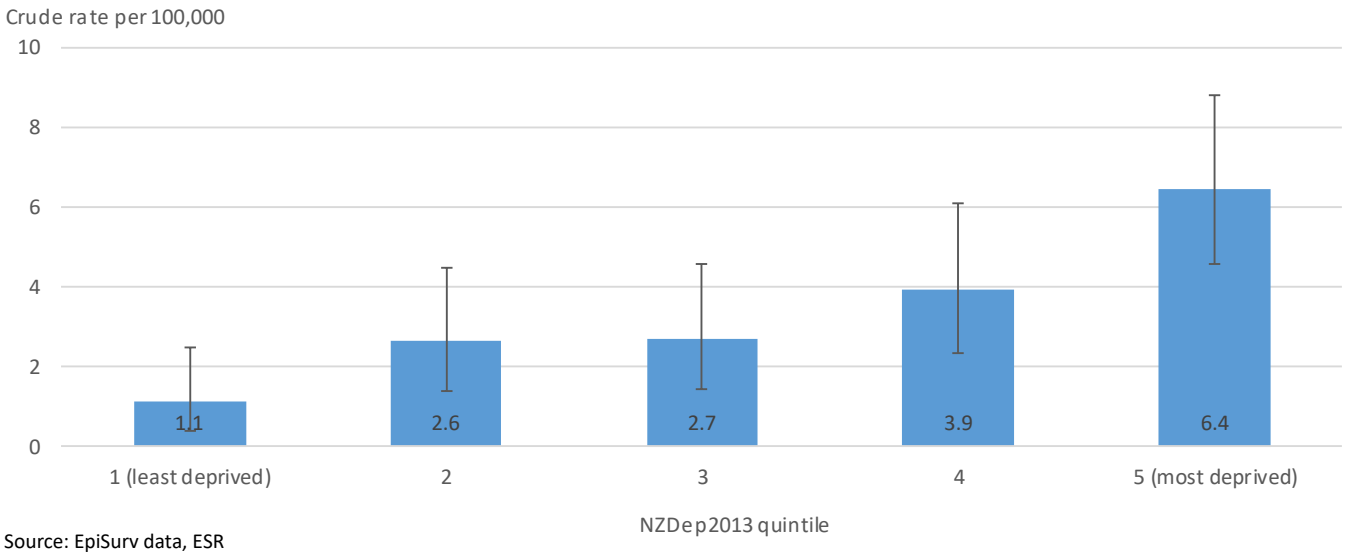
Source: EpiSurv data, ESR

Children living in high deprivation areas have much higher rates of meningococcal disease

In 2016, half of the meningococcal disease notifications in children came from those living in the most deprived areas (NZDep2013 quintile 5) (17 out of 35 notifications).

In 2014–16, the highest notification rates of meningococcal disease were for children living in the most deprived areas (Figure 8). Standardising for age, children living in the most deprived areas had almost five times the rate of meningococcal disease as children living in the least deprived areas (standardised rate ratio = 4.8, 95% confidence interval 2.0–11.4).

Figure 8 : Meningococcal disease notification rate in children aged 0–14 years, by NZDep2013 quintiles, 2014–16 (crude rate per 100,000)



Source: EpiSurv data, ESR

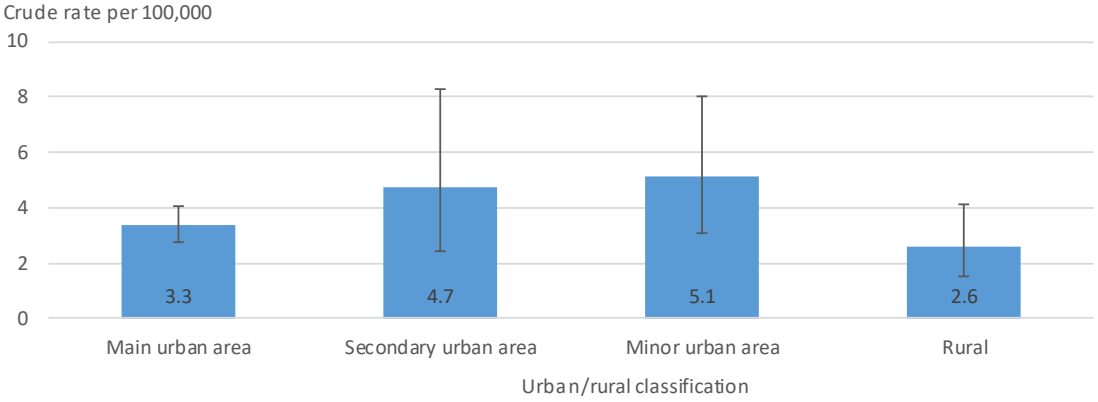
Meningococcal disease notifications (0–14 years)

No major differences in meningococcal disease notification rate by urban/rural areas

In 2016, most meningococcal disease notifications in children were for those living in main urban areas (26 out of 35 notifications). A further 1 notification was for a child living in a secondary urban area, 5 notifications for children living in minor urban areas, and 3 notifications for children living in rural areas.

In the five year period 2012–16, there were no major differences in the notification rates of meningococcal disease in children by urban/rural classification, although the rates were somewhat higher in secondary and minor urban areas (Figure 9).

Figure 9: Meningococcal disease notification rate in children aged 0–14 years, by urban/rural classification, 2012–16 (crude rate per 100,000)



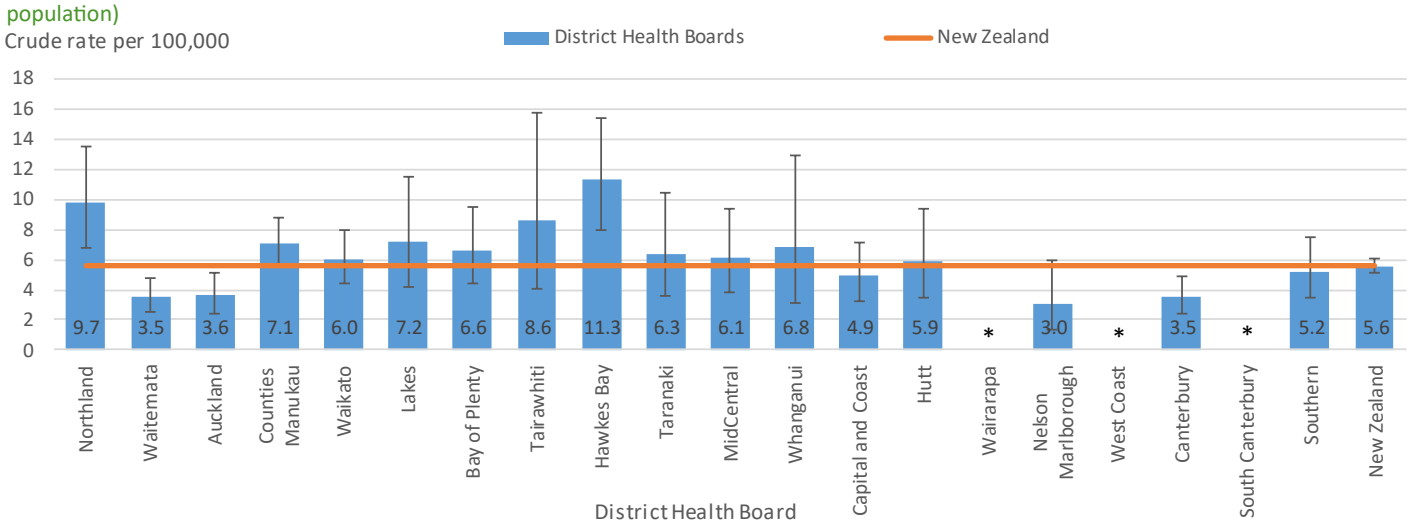
Notes: Urban/rural classification is for 2013. Main urban areas refer to major towns and cities with a population of 30,000 or more. Secondary urban areas are smaller towns with a population of 10,000–29,999 people. Minor urban areas are towns with a population of 1,000–9,999 people. Rural areas include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

High meningococcal disease notification rates in Hawke's Bay and Northland DHBs in 2007–16

In 2016, meningococcal disease notifications in children occurred across a number of District Health Boards (DHBs), including Counties Manukau (7 notifications), Waikato (6 notifications), and Bay of Plenty (5 notifications) DHBs.

In the past ten years (2007–16), the highest notification rates for meningococcal disease in children were in Hawke's Bay and Northland DHBs (Figure 10). There have been several regional outbreaks over this time, including an outbreak of group C disease in Northland in 2012 (ESR, 2014; Mills et al, 2013).

Figure 10: Meningococcal disease notification rate in children aged 0–14 years, by District Health Board, 2007–16 (crude rate per 100,000 population)



Notes: An asterisk (*) shows that the rate was suppressed due to counts less than five.
Source: EpiSurv data, ESR

Meningococcal disease notifications (0–14 years)

DATA SOURCES

Data for this indicator come from the EpiSurv notifications surveillance database, from ESR.

Crude rates have been presented instead of age-standardised rates, due to small numbers. However, where possible, we checked crude rates and age-standardised rates, and using age-standardised rates appeared to make little difference to the conclusions drawn in this factsheet.

95% confidence intervals have been presented as error bars on graphs. However, it should be noted that notifications only cover those people who visited a GP or hospital for treatment, and therefore may underestimate the true rate of disease in the population.

See the metadata for more information about this indicator.

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