

## **INVASIVE MENINGOCOCCAL DISEASE REPORT 23 November 2018**

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This report summarises invasive meningococcal disease notifications for the period from January to 16 November 2018 (a cumulative summary). The information in this report is based on cases reported up to 16 November 2018 (surveillance weeks 1–46) and extracted from EpiSurv and the Invasive Pathogens Laboratory results, ESR, on 20 November 2018. Data presented may be further updated and should be regarded as provisional.

This report will be updated on a quarterly basis. Shorter summary reports on trends will be produced on a fortnightly basis.

### **Summary**

Nationally the number of invasive meningococcal disease cases remains low. However, the number of cases reported has been increasing since 2014.

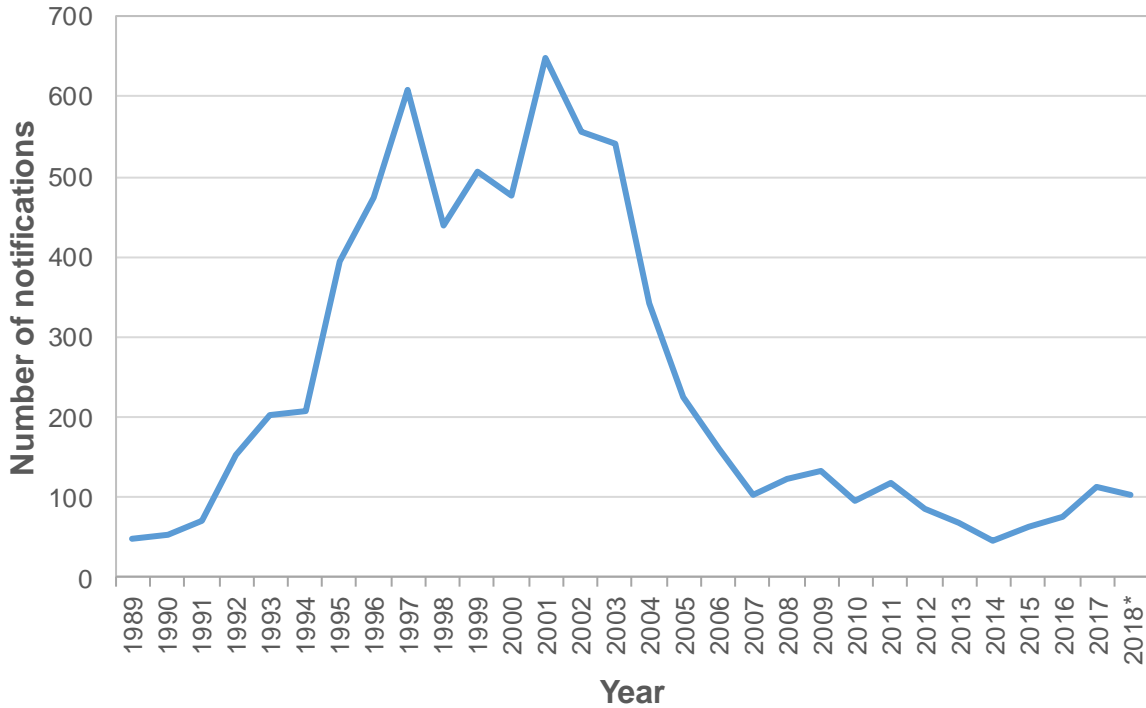
From 1 January to 16 November 2018, 102 cases of invasive meningococcal disease were reported. Of these:

- 96 cases were laboratory-confirmed. The group was identified in 92 of these cases; 44 were group B, 27 were group W, 10 were group Y, 8 were group C, 2 were non-groupable (NG) and 1 was an X.
- As compared to 2017, the proportion of group W cases has increased (from 11% to 29%) and the proportion of group B cases has decreased (from 67% to 48%)
- Cases have been reported from all but two District health boards (DHBs).
- Ten deaths were reported, including six due to group W.

### **National trends**

The total number of reported cases for 2018 YTD, is 102 cases with 10 deaths. This number is higher than the 94 cases and 8 deaths reported at the same time in 2017 and continues an increasing trend since 2014 when 45 cases were reported. The number of cases in recent years remains significantly lower than those reported during the meningococcal disease epidemic (driven by the B:P1.7-2,4 strain) (Figure 1).

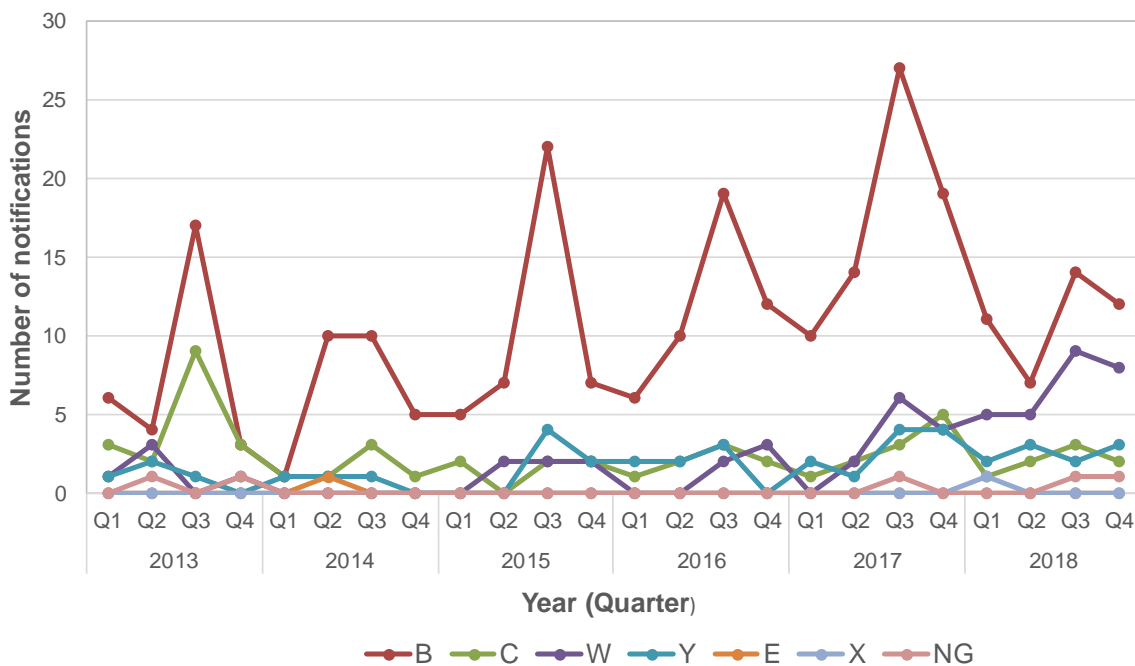
**Figure 1. Meningococcal disease notifications by year, 1989–2018\***



\*Cases reported up to 16 November 2018 only.

In 2018 YTD 96 (94.1%) cases were laboratory-confirmed and the group was determined for 92 cases: group B (44), group W (27 cases), group Y (10 cases), group C (8 cases), non-groupable (2 cases) and group X (1 case). The number of cases determined to be group W has shown an increase, starting in 2017, compared with previous years (Figure 2).

**Figure 2. Meningococcal disease notifications by group by quarter by year, 2013–2018\***



NG – non-groupable.

\*Cases reported up to 16 November 2018 only.

Notifications in 2018 continue to follow the usual seasonal pattern seen in New Zealand, whereby there is an increase in cases reported in winter and spring (Figure 2).

### Geographic distribution

In 2018 YTD Northland had the highest rate (5.7 per 100,000, 10 cases) followed by Bay of Plenty (3.9 per 100,000, 9 cases), Taranaki (3.4 per 100,000, 4 cases) and Southern (3.4 per 100,000, 11 cases) DHBs (Table 1).

The Auckland region (Waitemata, Auckland and Counties Manukau DHBs) had the highest group B notifications (13 cases) followed by Southern (8 cases) DHB. Northland DHB had the highest group W notifications (7 cases) (Table 1).

**Table 1. Meningococcal disease notifications by group by DHB, 1 Jan–16 Nov 2018**

District health board	Group						Total <sup>1</sup>	Rate per 100,000*
	B	W	Y	C	X	NG		
Northland	0	7	1	0	0	0	10	5.7
Waitemata	2	3	2	1	1	0	10	1.7
Auckland	3	4	1	1	0	0	11	2.1
Counties Manukau	8	2	1	0	0	0	12	2.2
Waikato	3	0	0	4	0	1	8	2.0
Lakes	0	2	1	0	0	0	3	2.8
Bay of Plenty	5	1	0	1	0	0	9	3.9
Tairāwhiti	1	0	0	0	0	0	1	2.1
Taranaki	3	0	0	1	0	0	4	3.4
Hawke's Bay	0	0	0	0	0	0	0	0.0
Whanganui	1	1	0	0	0	0	2	3.1
MidCentral	1	0	0	0	0	0	1	0.6
Hutt Valley	1	0	0	0	0	1	2	1.4
Capital & Coast	4	2	0	0	0	0	6	1.9
Wairarapa	0	0	1	0	0	0	1	2.2
Nelson Marlborough	1	0	1	0	0	0	2	1.3
West Coast	0	0	0	0	0	0	0	0.0
Canterbury	3	3	1	0	0	0	8	1.5
South Canterbury	0	0	0	0	0	0	1	1.7
Southern	8	2	1	0	0	0	11	3.4
<b>Total</b>	<b>44</b>	<b>27</b>	<b>10</b>	<b>8</b>	<b>1</b>	<b>2</b>	<b>102</b>	<b>2.1</b>

\*Rates should be interpreted with caution for DHBs with <5 cases.

<sup>1</sup> Note: Total is for total cases reported by DHB not total by group. This includes probable cases and other laboratory confirmed cases where no group or other strain characteristics were determined, or laboratory-confirmed isolates not received by the Meningococcal Reference Laboratory.

### Age group distribution

In 2018 YTD, there were cases of invasive meningococcal disease reported in all age groups. However, the overall number of cases was highest in children aged <5 years, 15–19 years and 20–29 years age groups (Figure 3) and rates of disease were highest in those aged <1 year and in the 1–4 and 15–19 years age groups (Figure 4).

Figure 3. Meningococcal disease notifications by group by age group, 1 Jan–16 Nov 2018

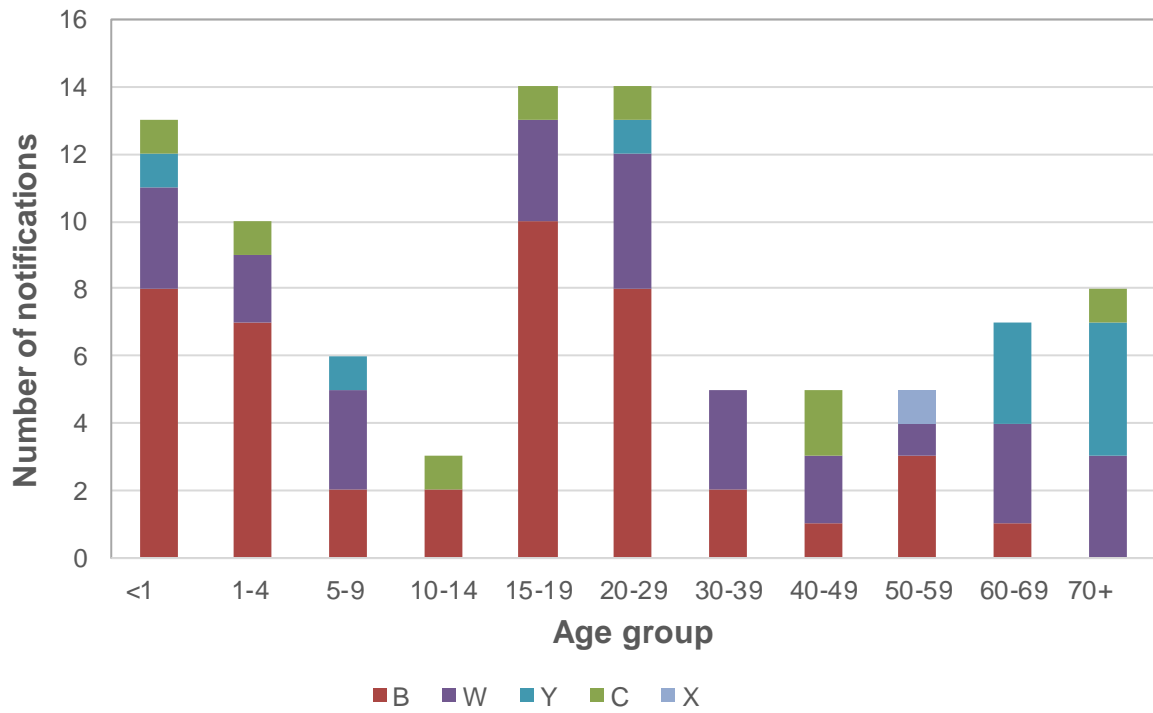
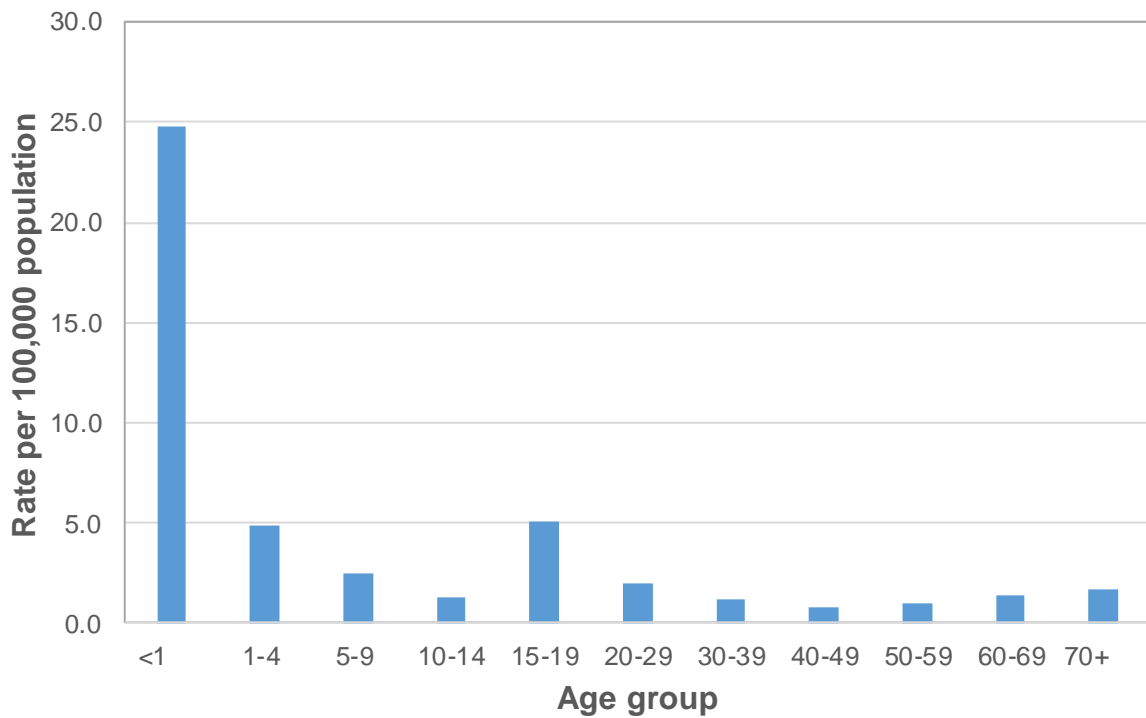


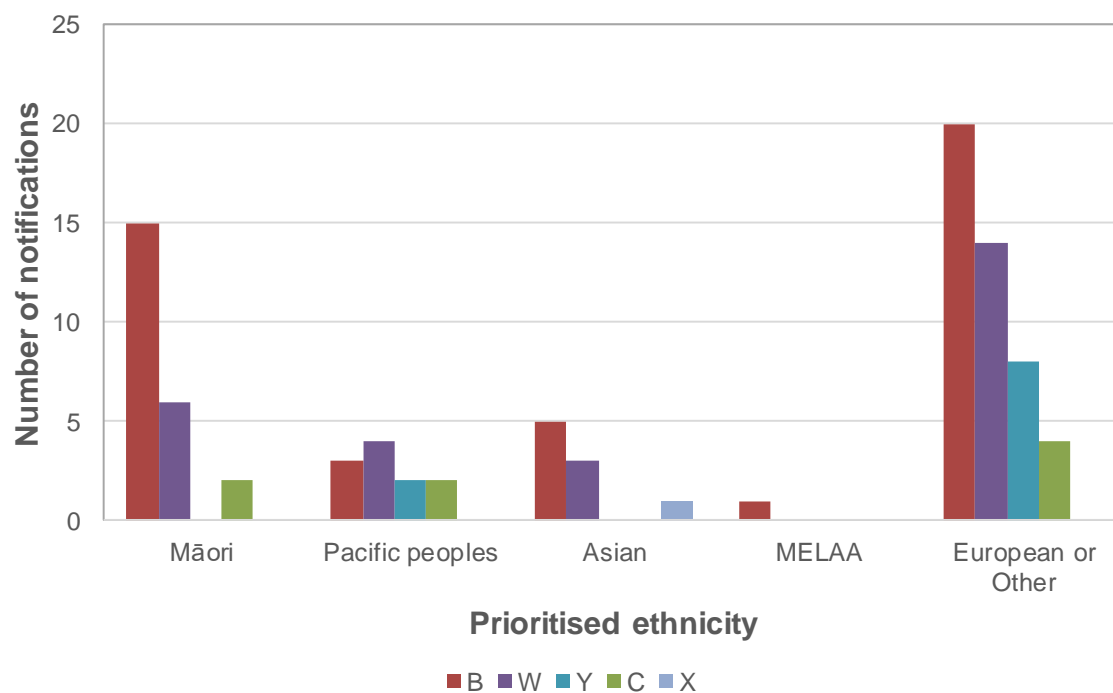
Figure 4. Meningococcal disease notifications rate by age group, 1 Jan–16 Nov 2018



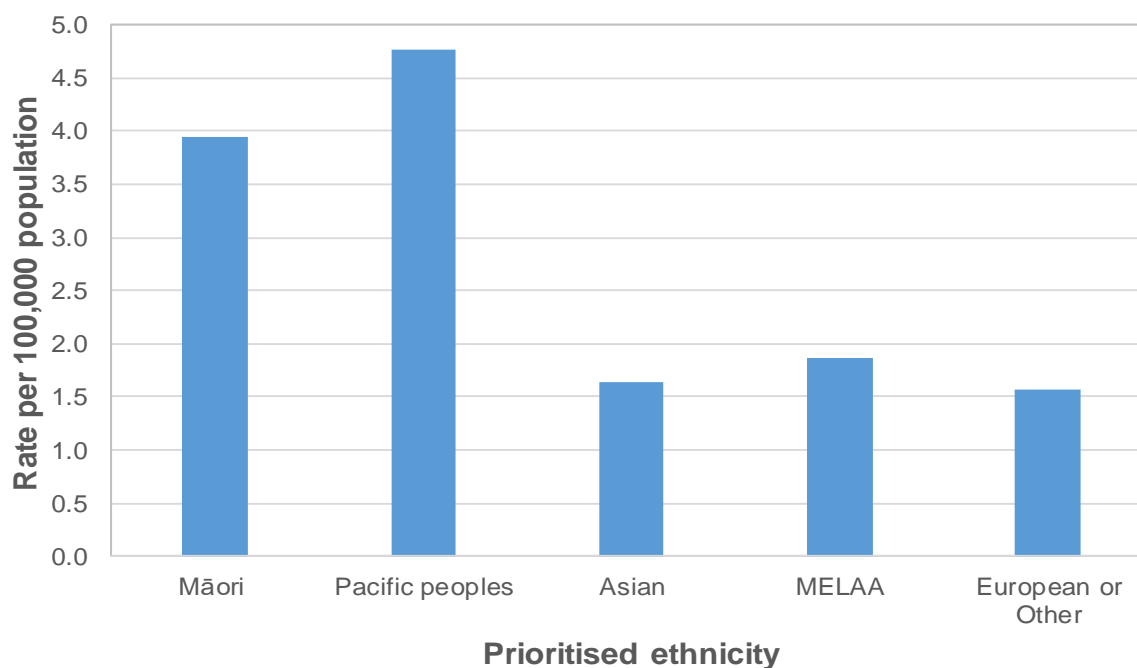
## Ethnicity<sup>1</sup> distribution

Although the highest number of cases was in the European ethnic group (Figure 5), rates of disease were highest in Pacific peoples and Māori ethnic groups (Figure 6).

**Figure 5. Meningococcal disease notifications by group by ethnicity, 1 Jan–16 Nov2018**



**Figure 6. Meningococcal disease notifications rate by ethnicity, 1 Jan–16 Nov2018**



MELAA - Middle Eastern/Latin American/African.

<sup>1</sup> A prioritised classification of ethnicity is used, with the Māori ethnic group at the top of the hierarchy followed by Pacific peoples, Asian, MELAA, and the European or Other ethnic group at the bottom of the hierarchy. For more detail on classification please refer to Ministry of Health (2004):

<http://www.health.govt.nz/publication/ethnicity-data-protocols-health-and-disability-sector>

## Deaths

There have been 10 deaths reported due to invasive meningococcal disease in 2018 YTD with six of these occurring in cases with group W disease. The average case fatality rate from 2013–2018 YTD is highest for cases with group W disease at 18.2%. The next highest rates are for cases with group B:P1.7-2,4 and group C disease (7.1% each) (Table 2).

**Table 2. Meningococcal disease deaths and case fatality rate (CFR) 2013–2018\***

Strain group	Number of deaths due to disease						Total fatality (2013-2018*)	Total cases (2013-2018*)	CFR (2013-2018*)
	2013	2014	2015	2016	2017	2018*			
Group B (P1.7-2,4) <sup>1</sup>	0	0	0	2	3	2	7	99	7.1
All other Bs	0	2	1	0	2	1	6	159	3.8
Group C	0	1	1	0	1	1	4	56	7.1
Group W	1	0	0	0	3	6	10	55	18.2
Group Y	1	0	1	0	0	0	2	41	4.9
Group E	0	0	0	0	0	0	0	1	0.0
Group X	0	0	0	0	0	0	0	1	0.0
Non-groupable <sup>2</sup>	0	0	0	0	0	0	0	5	0.0
Other laboratory confirmed <sup>3</sup>	1	0	0	0	0	0	1	18	5.6
Probable	1	0	1	0	0	0	2	31	6.5
<b>Total</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>9</b>	<b>10</b>	<b>32</b>	<b>466</b>	<b>6.9</b>

\*Cases reported up to 16 November 2018 only.

<sup>1</sup> New Zealand "epidemic strain".

<sup>2</sup> Non-groupable – group not determined but other strain characteristics were determined.

<sup>3</sup> Includes DNA laboratory-confirmed by PCR where no group or other strain characteristics were determined, or laboratory-confirmed isolates not received by the Meningococcal Reference Laboratory.

## Analyses by group as of 16 Nov 2018

A review of notifications since 2013 shows a shift in the groups causing invasive disease. The proportion of group B cases of all cases typed decreased from 67% in 2017 to 48% in 2018 YTD and the proportion of group W cases increased from 11% in 2017 to 29% in 2018 YTD.

For group B notifications, 2018 YTD, cases were reported from all age groups except in the 70 years and over but the highest number of cases and the highest rates were reported in those aged under 5 years and adolescents aged 15–19 years. While the number of cases reported was highest in the New Zealand European ethnic group, the rate was highest in the Māori and Pacific peoples ethnic groups. There were three deaths reported due to group B disease in 2018 YTD, two of these due to the B:P1.7-2,4 strain.

For group W notifications, 2018 YTD, cases were reported from all age groups apart from the 10–14 year age group. However, there has been a shift since mid-year from the majority (80%) of cases being in the >20 years age groups and of European/Other ethnicity to 50% of cases reported since June being in the <20 years age groups and 30% reporting European/Other ethnicity. There was a notable increase in the number of group W cases reported in Northland in 2018 YTD, to seven cases, compared with one case in the previous year. Of the seven Northland cases, five were reported in the past 3 months. There were six deaths reported due to group W in 2018 YTD, giving a case fatality rate of 22.2%, higher

than the average rate of 18.2% for 2013–2018 YTD (Table 2). All of the deaths have occurred in the second half of the year.

For group Y notifications, case numbers have remained stable since 2017, after a gradual increase from 2013 to 2017. The majority of group Y cases in 2018 YTD continue to be reported in older adults and in the European or Other ethnic groups. There were no deaths reported in 2018 YTD.

For group C notifications, 2018 YTD, case numbers remain low across all age groups and ethnic groups. There was one death reported in 2018 YTD.

#### Annex - Meningococcal disease strain group distribution by year, 2013–2018\*

Strain group	Year						Total
	2013	2014	2015	2016	2017	2018*	
<b>Group B</b>	<b>30</b>	<b>26</b>	<b>41</b>	<b>47</b>	<b>70</b>	<b>44</b>	<b>258</b>
B:P1.7-2,4 <sup>1</sup>	11	13	10	23	27	15	99
Other group Bs	19	13	31	24	43	29	159
<b>Group C</b>	<b>17</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>11</b>	<b>8</b>	<b>56</b>
C:P1.5-1,10-8	15	5	3	4	8	6	41
Other group Cs	2	1	3	4	3	2	15
<b>Other</b>	<b>21</b>	<b>13</b>	<b>17</b>	<b>20</b>	<b>31</b>	<b>50</b>	<b>152</b>
Group W	5	0	6	5	12	27	55
Group Y	4	3	6	7	11	10	41
Group E	0	1	0	0	0	0	1
Group X	0	0	0	0	0	1	1
Non-groupable <sup>2</sup>	2	0	0	0	1	2	5
Other laboratory confirmed <sup>3</sup>	3	2	2	3	4	4	18
Probable	7	7	3	5	3	6	31
<b>Total</b>	<b>68</b>	<b>45</b>	<b>64</b>	<b>75</b>	<b>112</b>	<b>102</b>	<b>466</b>

\*Cases reported up to 16 November 2018 only.

<sup>1</sup> New Zealand “epidemic strain”.

<sup>2</sup> Non-groupable – group not determined but other strain characteristics were determined.

<sup>3</sup> Includes DNA laboratory-confirmed by PCR where no group or other strain characteristics were determined, or laboratory-confirmed isolates not received by the Meningococcal Reference Laboratory.

This report is available at: [https://surv.esr.cri.nz/surveillance/Meningococcal\\_disease.php](https://surv.esr.cri.nz/surveillance/Meningococcal_disease.php)