

## INVASIVE MENINGOCOCCAL DISEASE REPORT

January–December 2019

This report summarises invasive meningococcal disease notifications for the period 1 January to 31 December 2019 (a cumulative summary). The information in this report was extracted from EpiSurv and the ESR Invasive Pathogens Laboratory results on 22 January 2020. Data presented may be further updated and should be regarded as provisional.

### Summary

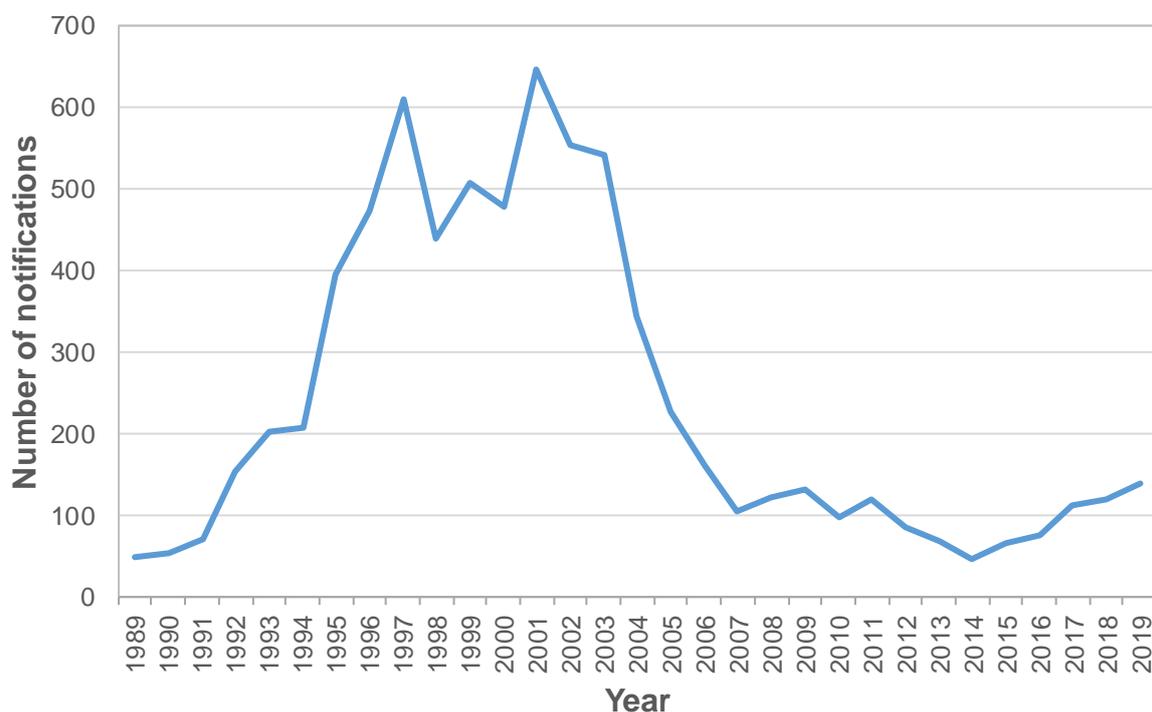
From 1 January to 31 December 2019, 139 cases of invasive meningococcal disease were reported, compared with 120 cases for the same period in 2018.

- 134 cases were laboratory confirmed. The group was identified in 122 of these cases; 62 (51%) were group B, 36 (30%) were group W, 16 (13%) were group Y, 7 (6%) were group C and 1 group E (1%).
- The proportion of cases that were due to group W (30%) was the same as in 2018 while group B increased from 46% in 2018 to 51% in 2019.
- Ten deaths were reported.

### National trends

In 2019, there were 139 cases of invasive meningococcal disease and 10 deaths reported. This compares with 120 cases and 10 deaths in 2018, and 112 cases and nine deaths in 2017. The annual number of cases has been increasing since 2014, however case numbers are significantly lower than during the meningococcal disease epidemic (driven by the B:P1.7-2,4 strain) (Figure 1).

**Figure 1. Meningococcal disease notifications by year, 1989–2019**

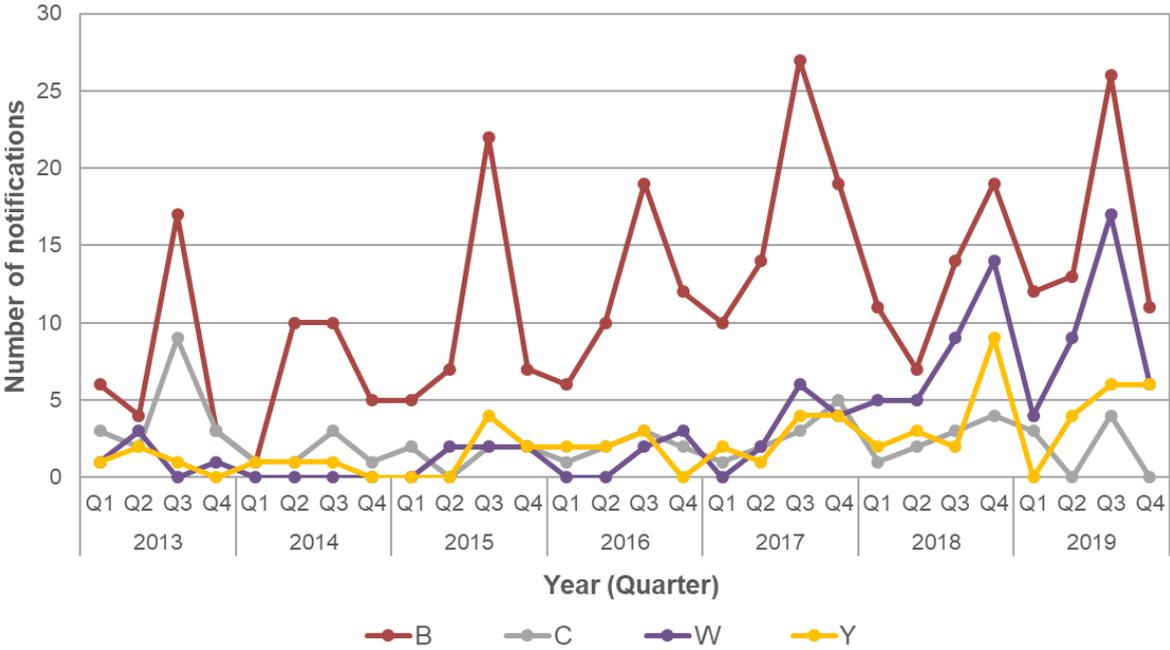


In 2019, 96.4% (134/139) of cases were laboratory confirmed, with the group determined for 122 cases: group B (62 cases, 50.8%), group W (36 cases, 29.5%), group Y (16 cases, 13.1%), group C (7 cases, 5.7%), and group E (1 case, 0.8%).

In 2018, 97.5% (117/120) of cases were laboratory confirmed and the group was determined for 111 cases: group B (51 cases, 45.9%), group W (33 cases, 29.7%), group Y (16 cases, 14.4%), group C (10 cases, 9.0%), and group X (1 case, 10.9%).

The number of cases due to group W has been increasing since 2017 (Figure 2).

**Figure 2. Meningococcal disease notifications by group by quarter by year, 2013–2019**



## Geographic distribution

In 2019, cases were reported from 18 DHBs. No cases were reported from West Coast and South Canterbury DHBs. Cases by group and rates for each DHB are shown in Table 1.

For the fourth quarter in 2019, there were 26 reported cases. Counties Manukau (5 cases) DHB had the highest number of reported cases. The group was identified in all cases as: group B (2 cases), group Y (2 cases), and group W (1 case).

**Table 1. Meningococcal disease notifications by group by DHB, 1 January–31 December 2019**

District Health Board	Group						Other lab-confirmed <sup>2</sup>	Probable <sup>3</sup>	Total	Rate per 100,000 <sup>4</sup>
	B	W	Y	C	E	NG <sup>1</sup>				
Northland	3	4	0	0	0	0	2	0	9	5.0
Waitemata	13	6	4	0	0	0	0	0	23	3.7
Auckland	4	3	0	0	0	2	1	2	12	2.2
Counties Manukau	11	6	4	0	1	0	1	0	23	4.1
Waikato	5	1	1	3	0	0	0	0	10	2.4
Lakes	0	1	1	0	0	0	0	1	3	2.7
Bay of Plenty	4	2	2	2	0	1	0	0	11	4.6
Tairāwhiti	1	1	0	0	0	0	0	0	2	4.1
Taranaki	0	0	1	0	0	0	0	0	1	0.8
Hawke's Bay	2	0	0	0	0	0	0	0	2	1.2
Whanganui	1	2	0	0	0	0	0	0	3	4.6
MidCentral	2	2	0	0	0	0	0	1	5	2.8
Hutt Valley	2	0	0	0	0	1	0	0	3	2.0
Capital & Coast	2	4	1	2	0	2	1	0	12	3.8
Wairarapa	1	1	0	0	0	0	0	0	2	4.4
Nelson Marlborough	1	0	0	0	0	0	0	0	1	0.7
West Coast	0	0	0	0	0	0	0	0	0	0.0
Canterbury	8	1	2	0	0	0	0	0	11	2.0
South Canterbury	0	0	0	0	0	0	0	0	0	0.0
Southern	2	2	0	0	0	0	1	1	6	1.8
<b>Total</b>	<b>62</b>	<b>36</b>	<b>16</b>	<b>7</b>	<b>1</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>139</b>	<b>2.8</b>

<sup>1</sup> Non-groupable – group not determined but other strain characteristics were determined.

<sup>2</sup> Includes DNA laboratory-confirmed by PCR where no group or other strain characteristics were determined, and laboratory confirmed isolates not received by the ESR Invasive Pathogens Laboratory.

<sup>3</sup> Probable – A clinically compatible illness without laboratory confirmation.

<sup>4</sup> Rates should be interpreted with caution for DHBs with <5 cases

### Age group distribution

For both 2018 and 2019, the highest number of cases were reported in those aged <5 years and 15–29 years (Table 2). The proportion of cases aged <5 years increased from 26.7% (32/120) in 2018 to 37.4% (52/139) in 2019.

The highest rate was in the <1 year age group and increased from 28.2 per 100,000 population in 2018 to 51.5 per 100,000 in 2019 (Figure 3).

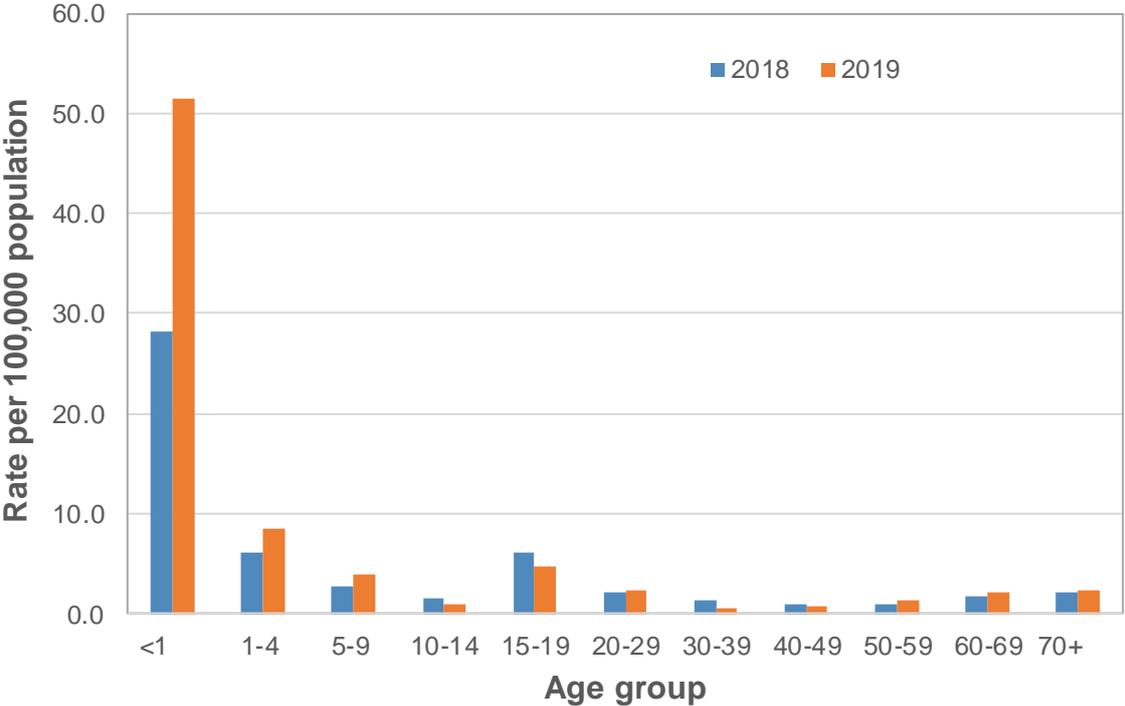
**Table 2. Meningococcal disease notifications by group by age group, 2018 and 2019**

Age group (years)	2018 Group					2018* Total	2019 Group					2019* Total
	B	W	Y	C	X		B	W	Y	C	E	
<1	11	3	1	1	0	17	16	8	1	0	0	31
1 to 4	7	4	1	1	0	15	10	5	1	0	0	21
5 to 9	3	3	1	0	0	9	6	1	1	2	0	13
10 to 14	3	1	0	1	0	5	3	0	0	0	0	3
15 to 19	12	3	0	2	0	19	9	2	1	2	1	15
20 to 29	8	5	1	1	0	15	6	8	1	1	0	17
30 to 39	2	3	1	0	0	8	0	1	1	0	0	3
40 to 49	1	2	0	3	0	6	4	1	0	0	0	5
50 to 59	3	2	0	0	1	6	3	2	2	1	0	8
60 to 69	1	3	5	0	0	9	3	3	4	1	0	11
70+	0	4	6	1	0	11	2	5	4	0	0	12
<b>Total</b>	<b>51</b>	<b>33</b>	<b>16</b>	<b>10</b>	<b>1</b>	<b>120</b>	<b>62</b>	<b>36</b>	<b>16</b>	<b>7</b>	<b>1</b>	<b>139</b>

Note: Non-groupable not shown in table.

\*2018 and 2019 totals include cases where the group was not identified.

**Figure 3. Meningococcal disease notification rates by age group, 2018 and 2019**



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

The number of cases by ethnicity and group are shown in Table 3. For both 2018 and 2019, the highest number of cases for group B were in the Māori and European or Other ethnic groups and the highest number of group W cases were in the European or Other ethnic group.

The rates for 2019, were highest for Pacific peoples and Māori (Figure 4). For both these ethnic groups, the rate for 2019 is higher than in 2018, whereas for the Asian and MELAA ethnic groups it is lower.

**Table 3. Meningococcal disease notifications by group by ethnicity, 2018 and 2019**

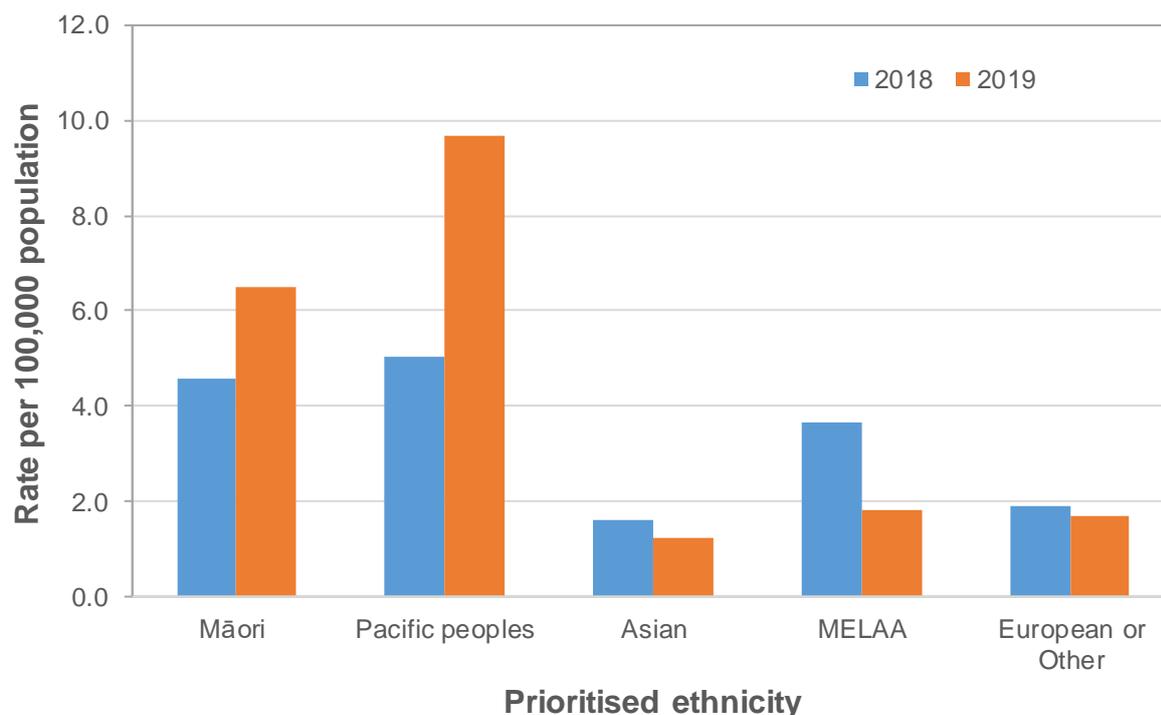
Prioritised Ethnicity	2018 Group					2018* Total	2019 Group					2019* Total
	B	W	Y	C	X		B	W	Y	C	E	
Māori	19	7	1	2	0	33	24	10	2	4	0	47
Pacific peoples	3	6	2	2	0	15	12	7	2	1	0	29
Asian	5	3	0	0	1	9	5	0	1	0	0	7
MELAA	1	0	0	1	0	2	1	0	0	0	0	1
European or Other	23	17	13	5	0	61	20	19	11	2	1	55
Unknown	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>51</b>	<b>33</b>	<b>16</b>	<b>10</b>	<b>1</b>	<b>120</b>	<b>62</b>	<b>36</b>	<b>16</b>	<b>7</b>	<b>1</b>	<b>139</b>

Note: Non-groupable not shown in table.

\*2018 and 2019 totals include cases where the group was not identified.

MELAA - Middle Eastern/Latin American/African.

**Figure 4. Meningococcal disease notification rates by ethnicity, 2018 and 2019**



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

In 2019, 10 deaths from invasive meningococcal disease were reported; five due to group B, two due to group W and one due to group Y. The group was not identified for two deaths. Of the 10 deaths reported in 2018, six were due to group W, three were due to group B and one group C. The average case fatality rate for 2014–2019 was highest for group W cases (12.0%), followed by the epidemic strain B:P1.7-2,4 and group C (8.3% each) (Table 4).

**Table 4. Meningococcal disease deaths and case fatality rate (CFR) 2014–2019**

Strain group	Number of deaths due to meningococcal disease						Total fatality (2014–2019)	Total cases (2014–2019)	CFR (2014–2019)
	2014	2015	2016	2017	2018	2019			
Group B (P1.7-2,4) <sup>1</sup>	0	0	2	3	2	2	9	108	8.3
All other Bs	2	1	0	2	1	3	9	189	4.8
Group C	1	1	0	1	1	0	4	48	8.3
Group W	0	0	0	3	6	2	11	92	12.0
Group Y	0	1	0	0	0	1	2	59	3.4
Group E	0	0	0	0	0	0	0	2	0.0
Group X	0	0	0	0	0	0	0	1	0.0
Non-groupable <sup>2</sup>	0	0	0	0	0	1	1	9	11.1
Other laboratory confirmed <sup>3</sup>	0	0	0	0	0	0	0	21	0.0
Probable <sup>4</sup>	0	1	0	0	0	1	2	26	7.7
<b>Total</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>9</b>	<b>10</b>	<b>10</b>	<b>38</b>	<b>555</b>	<b>6.8</b>

<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, and laboratory-confirmed isolates not received by the ESR Invasive Pathogens Laboratory.

<sup>4</sup> Probable – A clinically compatible illness without laboratory confirmation.

## Distribution by group

Since 2014, there has been a change in the proportion of invasive meningococcal disease due to the different groups (Table 5). Among cases where a group was identified, the proportion due to group B decreased from 67% in 2017 to 46% in 2018, followed by an increase in 2019 to 51%. The proportion of cases due to group W increased from 12% in 2017 to 30% in both 2018 and 2019.

For group B notifications, 52% (32/62) of the cases reported in 2019 were aged <10 years. Over half of the cases (28/62) were from the Auckland region, and the highest number of cases were of Māori ethnicity. Five deaths were reported due to group B disease in 2019 (2 deaths due to the B:P1.7-2,4 (epidemic) strain), three in 2018 and five in 2017.

For group W notifications, 61% (22/36) of the cases reported in 2019 were aged >10 years. Over half (53%, 19/36) were from the Auckland and Northland regions, and of European or Other ethnicity. There were two deaths due to group W in 2019, compared with six in 2018. Group W had the highest case fatality rate (12%) for the 2014–2019 period.

For group Y notifications, there were 16 cases notified in 2019. The majority of group Y cases in 2019 were in older adults (50 years and over) and in the European or Other ethnic group. One death from group Y was reported in 2019. There was a gradual increase in group Y cases from 2014 to 2019 (3 to 16 cases).

For group C notifications, there were seven cases reported in 2019. Most (5/7) cases were in children and young adults and most (4/7) were of Māori ethnicity. No deaths from group C were reported in 2019, compared with one in 2018.

**Table 5. Meningococcal disease strain group distribution by year, 2014–2019**

Strain group	Year						Total
	2014	2015	2016	2017	2018	2019	
<b>Group B</b>	<b>26</b>	<b>41</b>	<b>47</b>	<b>70</b>	<b>51</b>	<b>62</b>	<b>297</b>
B:P1.7-2,4 <sup>1</sup>	13	10	23	27	16	19	108
Other group Bs	13	31	24	43	35	43	189
<b>Group C</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>11</b>	<b>10</b>	<b>7</b>	<b>48</b>
C:P1.5-1,10-8	5	3	4	8	6	7	33
Other group Cs	1	3	4	3	4	0	15
<b>Other group</b>	<b>4</b>	<b>12</b>	<b>12</b>	<b>23</b>	<b>50</b>	<b>53</b>	<b>154</b>
Group W	0	6	5	12	33	36	92
Group Y	3	6	7	11	16	16	59
Group E	1	0	0	0	0	1	2
Group X	0	0	0	0	1	0	1
<b>Group not identified</b>	<b>9</b>	<b>5</b>	<b>8</b>	<b>8</b>	<b>9</b>	<b>17</b>	<b>56</b>
Non-groupable <sup>2</sup>	0	0	0	1	2	6	9
Other laboratory confirmed <sup>3</sup>	2	2	3	4	4	6	21
Probable <sup>4</sup>	7	3	5	3	3	5	26
<b>Total</b>	<b>45</b>	<b>64</b>	<b>75</b>	<b>112</b>	<b>120</b>	<b>139</b>	<b>555</b>

<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 ESR Invasive Pathogens Laboratory.

<sup>4</sup> Probable – A clinically compatible illness without laboratory confirmation.

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