

This report summarises invasive meningococcal disease notifications for the period from 1 January to 30 June 2019 (a cumulative summary). The information in this report is based on cases reported up to 30 June 2019 (surveillance weeks 1–26), and extracted from EpiSurv and the ESR Invasive Pathogens Laboratory results on 11 July 2019. Data presented may be further updated and should be regarded as provisional.

This report will be updated on a quarterly basis.

## Summary

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

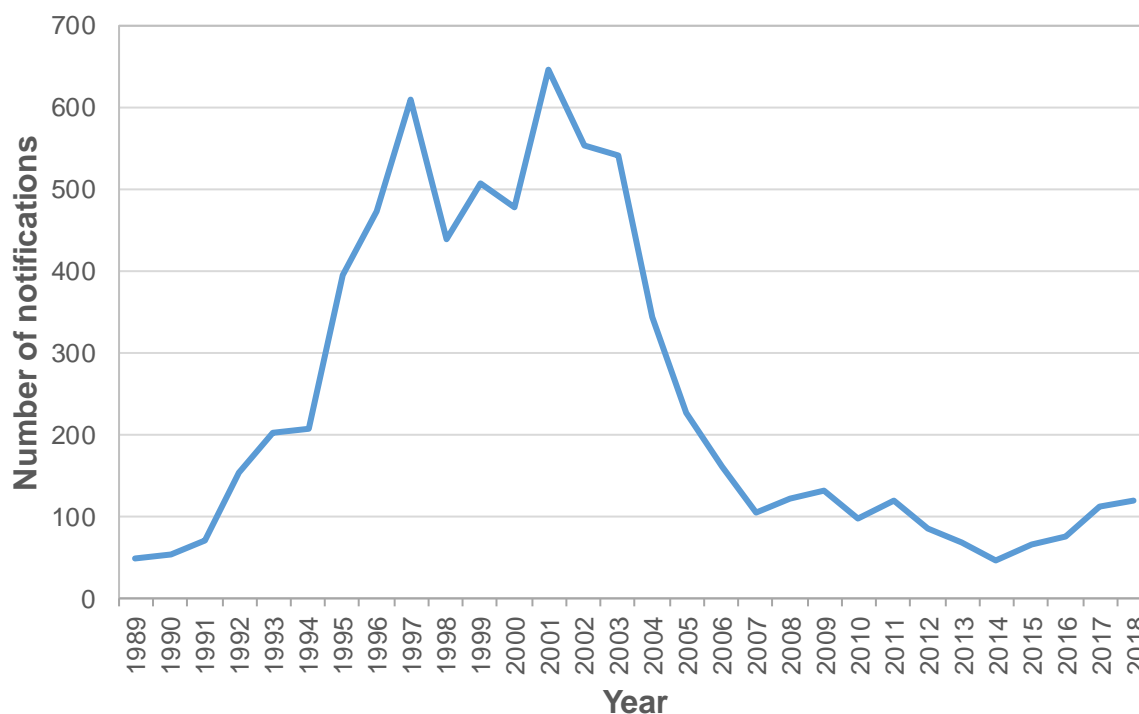
From 1 January to 30 June 2019, 50 cases of invasive meningococcal disease were reported, compared with 42 cases for the same period in 2018.

- 48 cases were laboratory-confirmed. The group was identified in 46 of these cases; 25 (54.3%) were group B, 13 (28.3%) were group W, four (8.7%) were group Y, three (6.5%) were group C and one (2.2%) was non-groupable.
- As compared with the first two quarters of 2018, the proportion of group W has increased (from 27.0% to 28.3%) and the proportion of group B cases has increased (from 48.6% to 54.3%).
- Cases have been reported from 13 district health boards (DHBs).
- Two deaths were reported.

## National trends

In the first two quarters of 2019, there have been 50 cases of invasive meningococcal disease and two deaths reported. The total number of reported cases for the same period in 2017 was 34 with four deaths, and in 2018 was 42 cases with three deaths. Although the annual number of cases has been increasing since 2014, case numbers remain 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

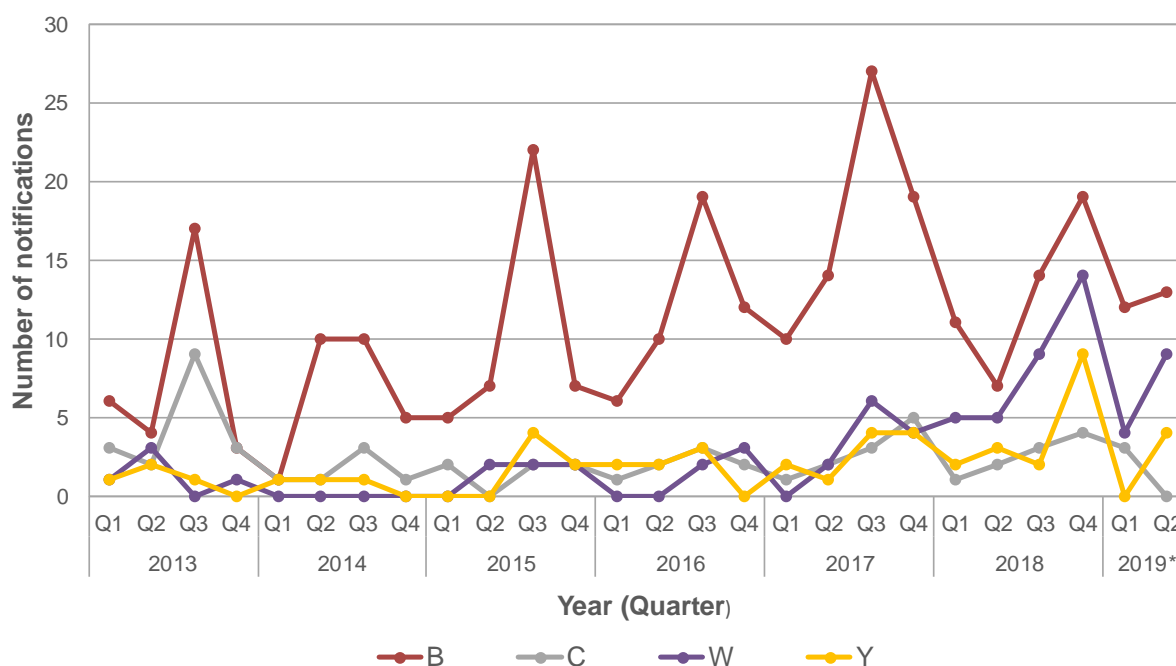


In the first two quarters of 2019, 96.0% (48/50) of cases were laboratory-confirmed with the group determined for 46 cases: group B (25 cases, 54.3%), group W (13 cases, 28.3%), group Y (4 cases, 8.7%), group C (3 cases, 6.5%), and non-groupable (1 case, 2.2%).

In the same period in 2018, 95.2% (40/42) of cases were laboratory-confirmed and the group was determined for 37 cases: group B (18 cases, 48.6%), group W (10 cases, 27.0%), group Y (5 cases, 13.5%), group C (3 cases, 8.1%), and group X (1 case, 2.7%) (Figure 2).

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\*



\*Cases reported up to 30 June 2019 only.

## Geographic distribution

In the first two quarters of 2019, cases were reported from 13 DHBs. Cases by group and rates for each DHB are shown in Table 1.

For the second quarter in 2019, there were 30 reported cases. Waitemata (8 cases) and Canterbury (6 cases) DHBs had the highest number of reported cases. For Waitemata DHB, the group was identified as: group B (4 cases), group W (2 cases) and group Y (2 cases); while Canterbury DHB had group B (4 cases) and group W (2 cases).

**Table 1. Meningococcal disease notifications by group by DHB, 1 January–30 June 2019**

District Health Board	Group					Other lab-confirmed <sup>2</sup>	Probable <sup>3</sup>	Total	Rate per 100,000*
	B	W	Y	C	NG <sup>1</sup>				
Northland	0	2	0	0	0	1	0	3	1.7
Waitemata	5	3	2	0	0	0	0	10	1.6
Auckland	3	2	0	0	0	0	0	5	0.9
Counties Manukau	3	2	0	0	0	0	0	5	0.9
Waikato	3	1	0	0	0	0	0	4	1.0
Lakes	0	0	0	0	0	0	1	1	0.9
Bay of Plenty	2	1	0	2	0	0	0	5	2.1
Tairāwhiti	0	1	0	0	0	0	0	1	2.0
Taranaki	0	0	0	0	0	0	0	0	0.0
Hawke's Bay	0	0	0	0	0	0	0	0	0.0
Whanganui	1	0	0	0	0	0	0	1	1.5
MidCentral	1	1	0	0	0	0	0	2	1.1
Hutt Valley	0	0	0	0	0	0	0	0	0.0
Capital & Coast	1	0	0	1	1	1	0	4	1.3
Wairarapa	0	0	0	0	0	0	0	0	0.0
Nelson Marlborough	0	0	0	0	0	0	0	0	0.0
West Coast	0	0	0	0	0	0	0	0	0.0
Canterbury	6	0	2	0	0	0	0	8	1.4
South Canterbury	0	0	0	0	0	0	0	0	0.0
Southern	0	0	0	0	0	0	1	1	0.3
<b>Total</b>	<b>25</b>	<b>13</b>	<b>4</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>50</b>	<b>1.0</b>

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

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

<sup>3</sup> Probable – A clinically compatible illness.

## Age group distribution

In the first two quarters of 2019, the majority of the cases were reported in the <1 year (11 cases) and 1–4 years (10 cases) age groups (Table 2). No cases were reported in the 10–14 and 15–19 years age groups. Annualised rates, based on cases reported in the first two quarters, were highest in the <1 year and 1–4 years age groups (Figure 3).

In 2018, the number of cases of invasive meningococcal disease was highest in the <5 years, 15–19 years and 20–29 years age groups (Table 2), and rates of disease were highest in those aged <1 year and in the 1–4 and 15–19 years age groups (Figure 3).

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

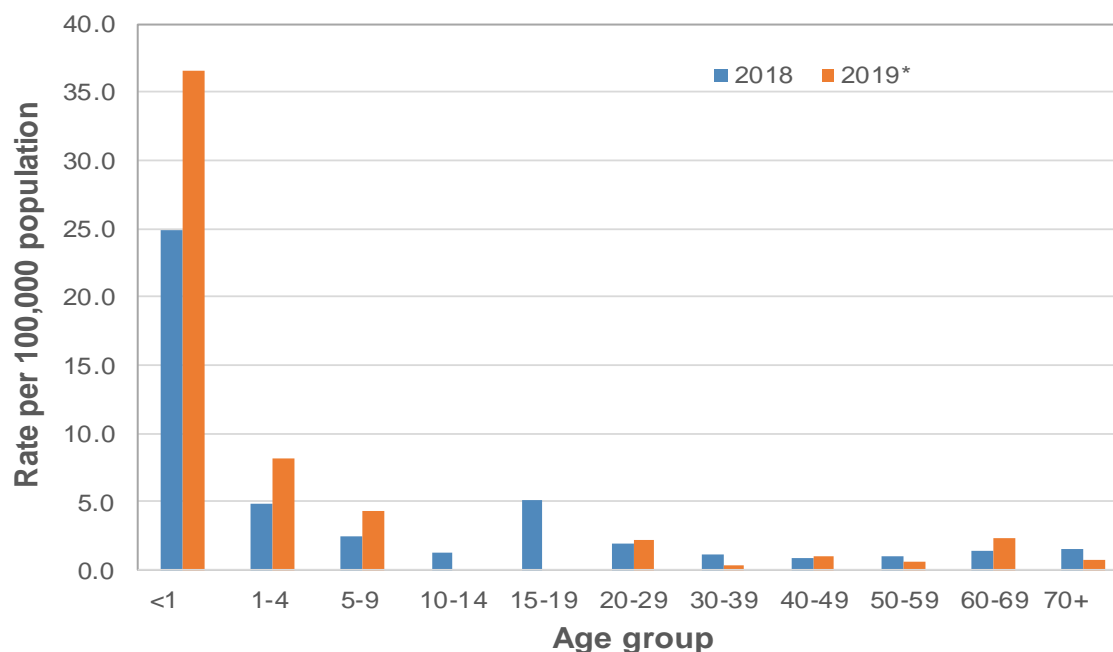
Age group (years)	2018 Group					2018** Total	2019* Group				2019** Total
	B	W	Y	C	X		B	W	Y	C	
<1	11	3	1	1	0	<b>17</b>	6	4	0	0	<b>11</b>
1 to 4	7	4	1	1	0	<b>15</b>	7	2	0	0	<b>10</b>
5 to 9	3	3	1	0	0	<b>9</b>	2	1	1	2	<b>7</b>
10 to 14	3	1	0	1	0	<b>5</b>	0	0	0	0	<b>0</b>
15 to 19	12	3	0	2	0	<b>19</b>	0	0	0	0	<b>0</b>
20 to 29	8	5	1	1	0	<b>15</b>	4	2	0	1	<b>8</b>
30 to 39	2	3	1	0	0	<b>8</b>	0	0	0	0	<b>1</b>
40 to 49	1	2	0	3	0	<b>6</b>	2	1	0	0	<b>3</b>
50 to 59	3	2	0	0	1	<b>6</b>	1	1	0	0	<b>2</b>
60 to 69	1	3	5	0	0	<b>9</b>	2	2	2	0	<b>6</b>
70+	0	4	6	1	0	<b>11</b>	1	0	1	0	<b>2</b>
<b>Total</b>	<b>51</b>	<b>33</b>	<b>16</b>	<b>10</b>	<b>1</b>	<b>120</b>	<b>25</b>	<b>13</b>	<b>4</b>	<b>3</b>	<b>50</b>

\*Cases reported up to 30 June 2019 only.

Note: Non-groupable not shown in table. One in 2019 (30–39 years) and two in 2018 (5–9 and 15–19 years).

\*\*2018 Total and 2019 Total are shown for all cases including those where the group was not identified.

Figure 3. Meningococcal disease notifications rate by age group, 2018 and 2019\*



\*Cases reported up to 30 June 2019 only. Annualised rate using quarter 1 and 2 notifications.

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

In the first two quarters of 2019, cases were reported in the following ethnic groups: Māori (20 cases), European or Other (15 cases), Pacific peoples (11 cases) and Asian (4 cases) (Table 3). The annualised rates, based on cases reported in the first two quarters, were highest in Pacific peoples and Māori ethnic groups (Figure 4). In 2018, although the highest number of cases was in the European ethnic group (Table 3), the rates of disease were highest in Pacific peoples and Māori ethnic groups (Figure 4).

As in 2018, the highest number of group W cases reported in the first two quarters of 2019 have been in the Māori ethnic group (Table 3).

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

Prioritised Ethnicity	2018 Group					2018** Total	2019 Group				2019** Total
	B	W	Y	C	X		B	W	Y	C	
Māori	19	7	1	2	0	33	10	6	0	2	20
Pacific peoples	3	6	2	2	0	15	5	3	1	1	11
Asian	5	3	0	0	1	9	3	0	0	0	4
MELAA	1	0	0	1	0	2	0	0	0	0	0
European or Other	23	17	13	5	0	61	7	4	3	0	15
<b>Total</b>	<b>51</b>	<b>33</b>	<b>16</b>	<b>10</b>	<b>1</b>	<b>120</b>	<b>25</b>	<b>13</b>	<b>4</b>	<b>3</b>	<b>50</b>

\*Cases reported up to 30 June 2019 only.

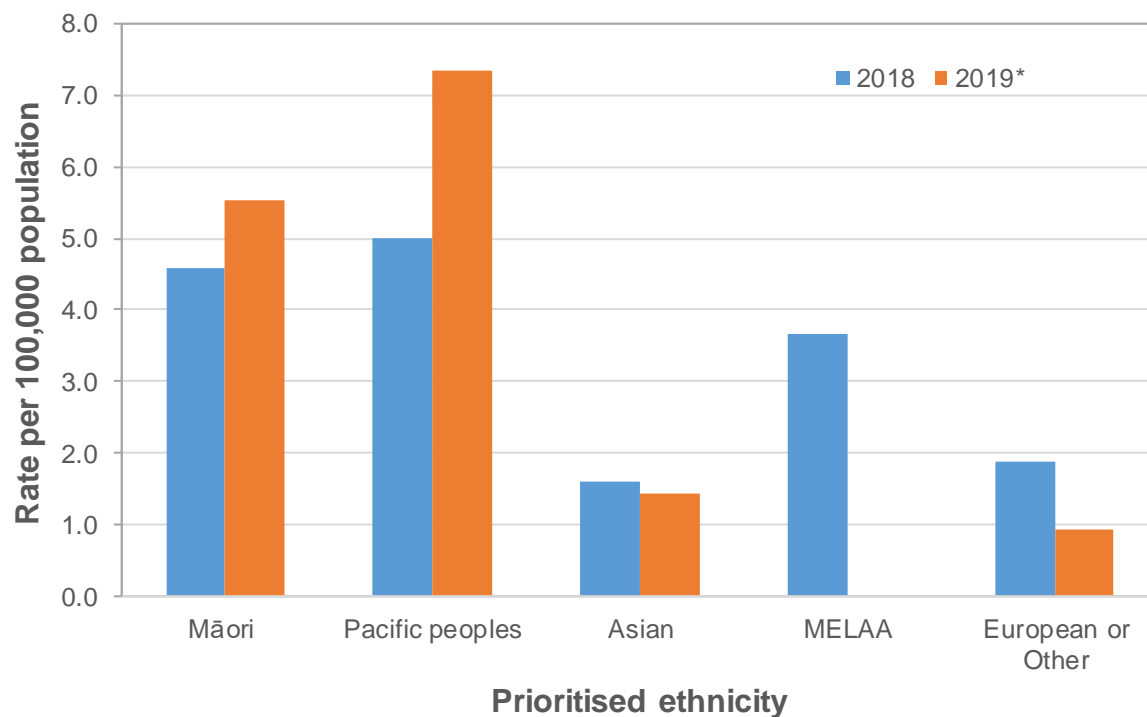
Note: Non-groupable not shown in table. One in 2019 (Pacific peoples) and two in 2018 (Māori and European or Other). MELAA - Middle Eastern/Latin American/African.

\*\*2018 Total and 2019 Total are shown for all cases including those where the group was not identified.

<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>

Figure 4. Meningococcal disease notifications rate by ethnicity, 2018–2019\*



MELAA - Middle Eastern/Latin American/African.

\*Cases reported up to 30 June 2019 only. Annualised rate using quarter 1 and 2 notifications.

## Deaths

In the first two quarters of 2019, two invasive meningococcal disease deaths were reported; one due to group W and one due to group B. There were 10 deaths reported in 2018 with six due to group W. The average case fatality rate for 2014–2019 (up to quarter 2) is highest for cases with group W disease at 14.5%. The next highest rates are for cases with group C (9.1%) and group B:P1.7-2,4 (7.2%) (Table 4).

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

Strain group	Number of deaths due to 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	0	7	97	7.2
All other Bs	2	1	0	2	1	1	7	163	4.3
Group C	1	1	0	1	1	0	4	44	9.1
Group W	0	0	0	3	6	1	10	69	14.5
Group Y	0	1	0	0	0	0	1	47	2.1
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	4	0.0
Other laboratory confirmed <sup>3</sup>	0	0	0	0	0	0	0	17	0.0
Probable	0	1	0	0	0	0	1	23	4.3
<b>Total</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>9</b>	<b>10</b>	<b>2</b>	<b>30</b>	<b>466</b>	<b>6.4</b>

\*Cases reported up to 30 June 2019 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 ESR Invasive Pathogens Laboratory.

## Distribution by group

A review of notifications since 2014 shows a shift in the groups causing invasive meningococcal disease (Table 5). Among cases where a group was identified, the proportion due to group B decreased from 67% in 2017 to 45% in 2018, followed by a rise in the first two quarters of 2019 to 54%. The proportion of cases due to group W increased from 11% in 2017 to 29% in 2018, and was 28% in the first two quarters of 2019.

For group B notifications, just over half (15/25, 60%) of the cases reported in the first two quarters of 2019 were aged <10 years with the remainder aged over 20 years. In 2018, cases were reported from all age groups except the 70+ years age group, but the highest number of cases and the highest rates were reported in those aged <5 years and 15–19 years. One death was reported due to group B disease in the first two quarters of 2019, compared to three deaths in 2018, two of these due to the B:P1.7-2,4 strain.

For group W notifications, half (7/13) of the cases reported in the first two quarters of 2019 were aged <10 years. There were six deaths reported due to group W in 2018, all in the second half of the year, and one in the first two quarters of 2019. The case fatality rate for group W cases was 14.5% for 2014–2019 (Table 4).

For group Y notifications, there have been four cases notified in the first two quarters of 2019. The majority of group Y cases in 2019 continued to be reported in older adults and in the European or Other ethnic group. No deaths from group Y have been reported in 2019. There has been a gradual increase in case numbers from 2014 to 2018 (3 to 16 cases).

For group C notifications, there have been three cases reported in the first two quarters of 2019. The cases were aged in the 5–9 and 20–29 years age groups and were of Māori and Pacific ethnicity. In contrast, for 2018, cases were reported across all age groups and ethnic groups. There was one death from group C reported 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>25</b>	<b>260</b>
B:P1.7-2,4 <sup>1</sup>	13	10	23	27	16	8	97
Other group Bs	13	31	24	43	35	17	163
<b>Group C</b>	<b>6</b>	<b>6</b>	<b>8</b>	<b>11</b>	<b>10</b>	<b>3</b>	<b>44</b>
C:P1.5-1,10-8	5	3	4	8	6	3	29
Other group Cs	1	3	4	3	4	0	15
<b>Other</b>	<b>13</b>	<b>17</b>	<b>20</b>	<b>31</b>	<b>59</b>	<b>22</b>	<b>162</b>
Group W	0	6	5	12	33	13	69
Group Y	3	6	7	11	16	4	47
Group E	1	0	0	0	0	0	1
Group X	0	0	0	0	1	0	1
Non-groupable <sup>2</sup>	0	0	0	1	2	1	4
Other laboratory confirmed <sup>3</sup>	2	2	3	4	4	2	17
Probable	7	3	5	3	3	2	23
<b>Total</b>	<b>45</b>	<b>64</b>	<b>75</b>	<b>112</b>	<b>120</b>	<b>50</b>	<b>466</b>

\*Cases reported up to 30 June 2019 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 ESR Invasive Pathogens Laboratory.

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