

PERTUSSIS REPORT

30 June–27 July 2018

Data contained within this monthly report is based on information recorded on EpiSurv by public health service staff as at 7 August 2018. Changes made to EpiSurv data after this date will not be reflected in this report. The results presented may be further updated and should be regarded as provisional. Cases still under investigation are not included in this report.

- A national pertussis outbreak is ongoing.
- A non-significant decrease in pertussis notifications for the current four weeks (weeks 27–30, 2018) compared with the previous four weeks (weeks 23–26, 2018).
- A significant increase in pertussis notifications for the current four weeks (weeks 27–30, 2018) compared with the same four surveillance weeks in 2017.

Summary

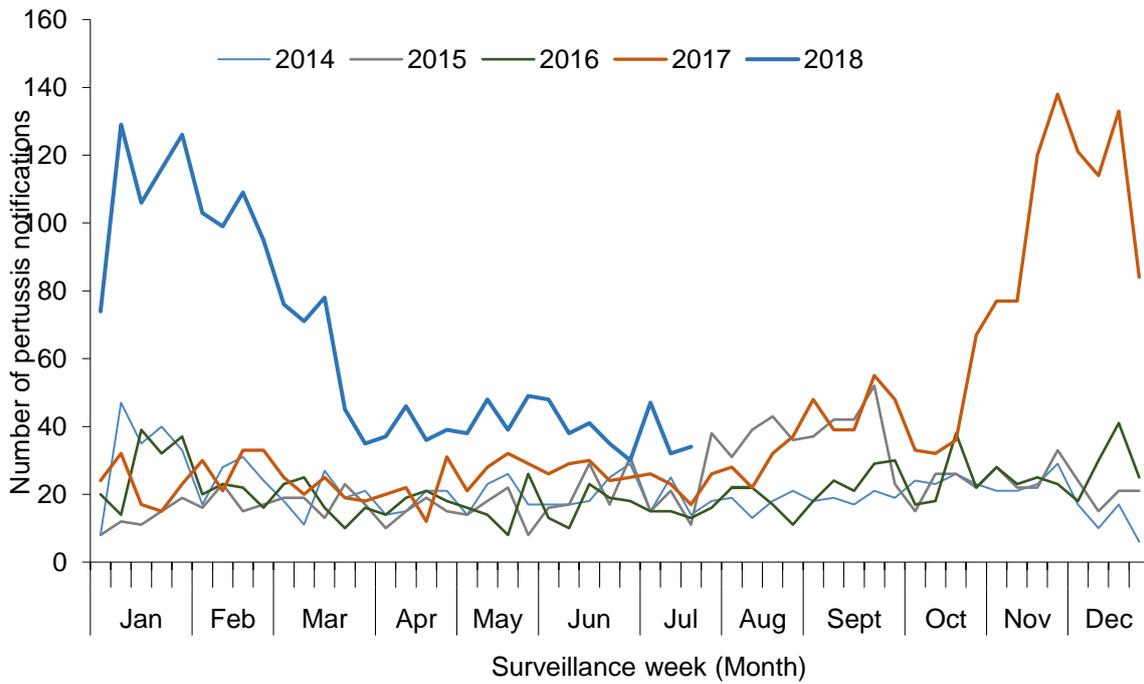
- In the past four surveillance weeks (weeks 27–30, 30 June–27 July 2018), 143 cases of pertussis were notified (30, 47, 32, and 34 cases, consecutively – Figure 1)¹. This included 74 confirmed, 59 probable, and 10 suspect cases. This is significantly higher than the 91 cases reported in the same four surveillance weeks in 2017 (Table 2). In the past four surveillance weeks in 2018, 10 (7.0%) cases were aged less than 1 year and three of these cases were hospitalised. Of all 143 cases, seven cases were hospitalised and no deaths were reported.
- From 1 January–27 July 2018, there was a total of 1899 confirmed, probable and suspect cases of pertussis notified (39.6 cases per 100,000). Of the 1899 cases, 110 cases (5.8%) were aged less than 1 year, of which 51 (46.4%) were hospitalised (Table 1). Of all 1899 cases, 119 cases (6.3%) were hospitalised.
- From 1 January–27 July 2018, the highest reported pertussis rates were among the less than 1 year and 1–4 years age groups (181.6 and 103.1 per 100,000, respectively). The ethnic groups with the highest notification rates were Māori (48.6 per 100,000, 339 cases) followed by European or Other (44.1 per 100,000, 1376 cases) (Figure 4).
- From 1 January–27 July 2018, the highest numbers of pertussis cases were reported by Nelson Marlborough (264 cases), Waikato (222 cases) and Bay of Plenty (211 cases) DHBs (Table 3). The DHB with the highest rate was West Coast (329.2 per 100,000, 107 cases), followed by Nelson Marlborough (177.4 per 100,000), Bay of Plenty (91.0 per 100,000) and Wairarapa (80.9 per 100,000, 36 cases) DHBs.
- From the beginning of the current national outbreak period (commencing 16 October 2017) to the end of 2017 there was a total of 1001 cases (592 confirmed, 387 probable, and 22 suspect cases).
- This report summarises pertussis notifications for the period from 1 January 2018 to 27 July 2018 (a cumulative summary). It includes the distribution of cases by time, age, prioritised ethnicity and DHB. A summary of the cases from the current four-week period (30 June–27 July 2018) is also provided.

¹ Cases still under investigation are not included in this report. Because cases under investigation have still to be classified (as confirmed, probable, suspect or not a case), the total case counts for surveillance weeks may change in future reports.

Trends in pertussis notifications

Total pertussis notifications by week for 2014–2018 (to week ending 27 July 2018) are shown in Figure 1 below.

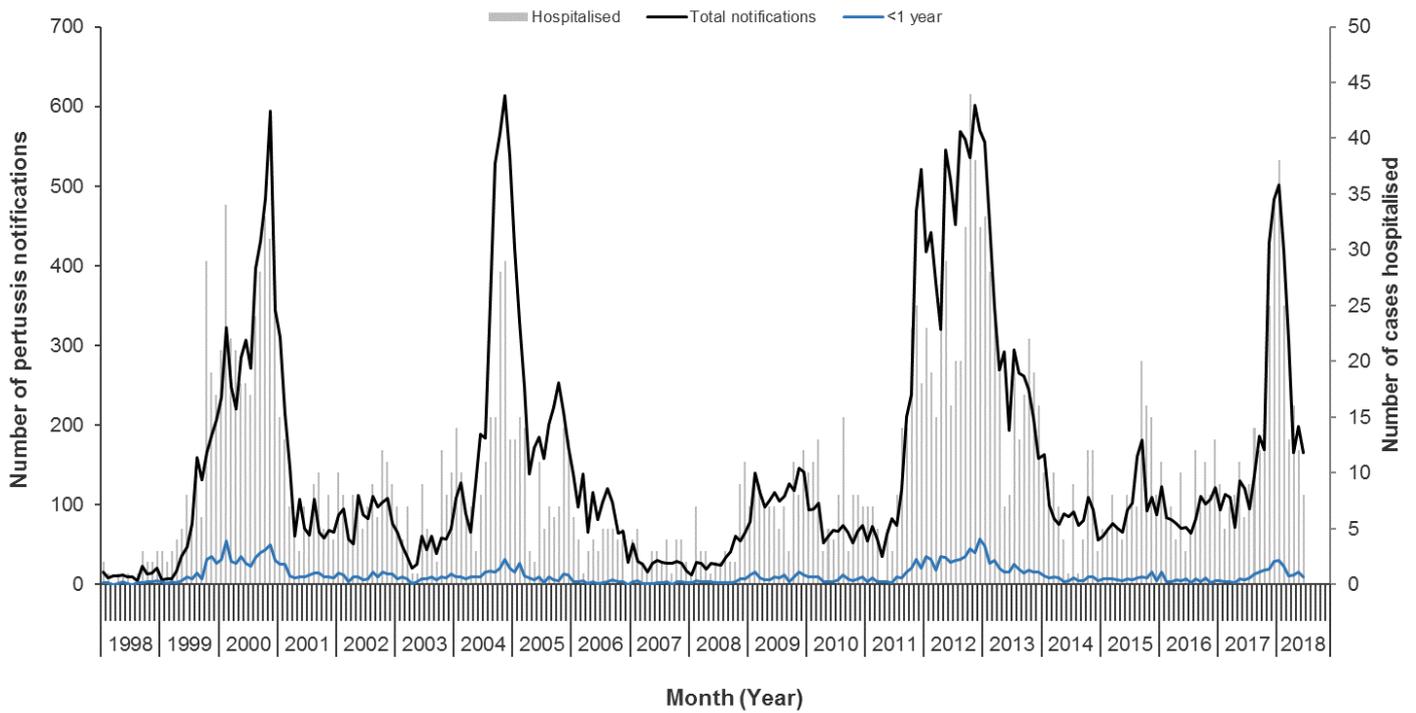
Figure 1: Number of pertussis notifications by week reported, 2014–2018



Note: Includes confirmed, probable, and suspect cases only. Cases still under investigation are excluded.

Figure 2 shows pertussis notifications and hospitalisations by calendar month, and notifications for those aged less than 1 year between January 1998 and June 2018. A four- to- five-year cycle can be seen with large peaks in the number of notifications in years 2000, 2004, 2011/12 and at the end of 2017/early 2018.

Figure 2: Number of pertussis notifications and hospitalisations by month and year, 1998–June 2018



Note: Includes confirmed, probable, and suspect cases only. Cases still under investigation are excluded.

Age

The number of pertussis notifications, rates and hospitalisations by age group are shown in Table 1 (cumulative total for 2018). Table 2 shows the number of notifications and hospitalisations during the current four surveillance weeks in 2018 compared with the same four surveillance weeks in 2017.

Table 1: Number of (confirmed, probable and suspect) pertussis notifications, rates (cases per 100,000 population) and hospitalisations by age group, 1 January–27 July 2018

Age group (years)	Total for 2018 ¹		Hospitalised ¹	
	Number of cases	Rate ²	Number of cases	Percent (%)
<1	110	181.6	51	46.4
1–4	253	103.1	16	6.3
5–9	262	80.3	5	1.9
10–14	190	63.0	1	0.5
15–19	117	37.0	3	2.6
20+	967	27.3	43	4.4
All ages	1899	39.6	119	6.3

¹ Cumulative total 1 January–27 July 2018

² Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates.

Table 2: Number of (confirmed, probable and suspect) pertussis notifications and hospitalisations in surveillance weeks 27–30, 2018 and 2017

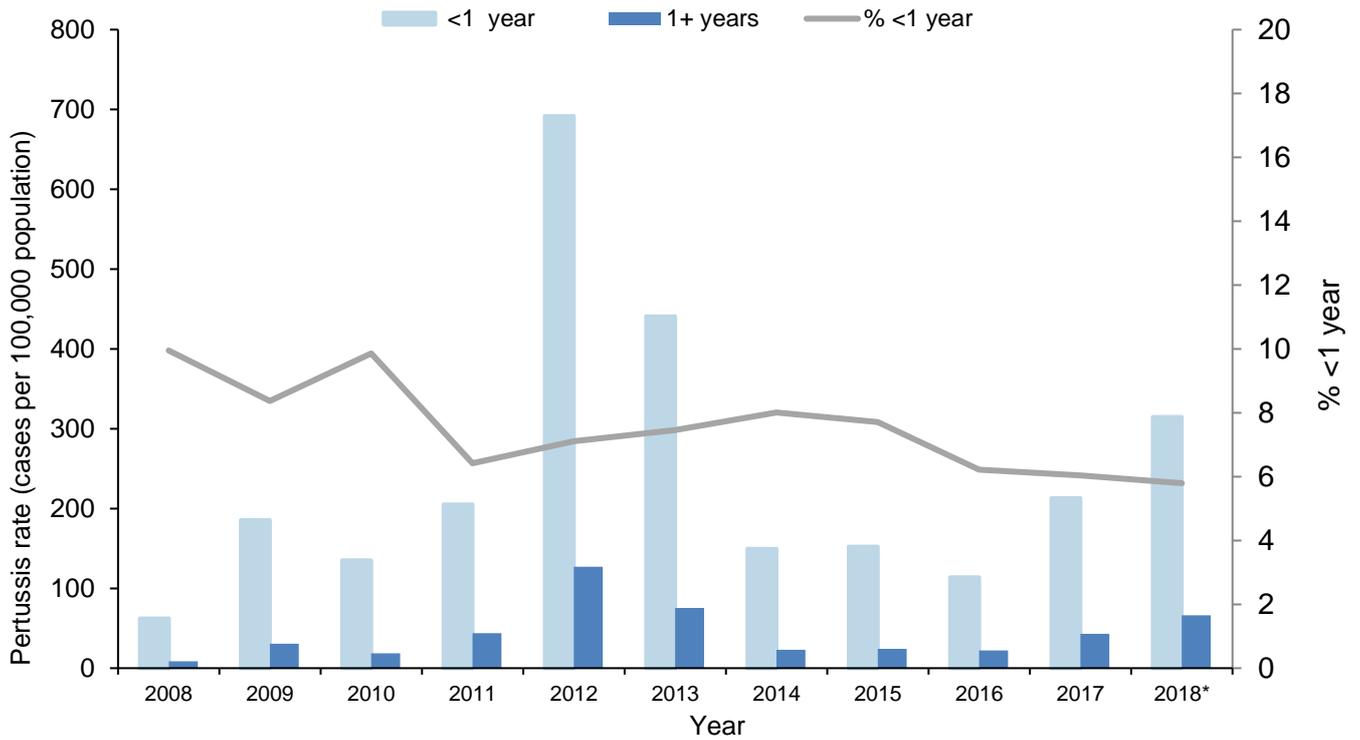
Age group (years)	Recent four surveillance weeks in 2018 (weeks 27-30) ¹		Same four surveillance weeks in 2017 (weeks 27-30) ²	
	Number of cases	Cases hospitalised	Number of cases	Cases hospitalised
<1	10	3	8	4
1–4	16	0	9	0
5–9	20	0	7	1
10–14	9	0	11	0
15–19	13	0	9	1
20+	75	4	47	3
All ages	143	7	91	9

¹ 30 June -27 July 2018

² 1–28 July 2017

Pertussis rates by age group (<1 year and 1+ years) are shown in Figure 3.

Figure 3: Pertussis rate (cases per 100,000 population) by age group (<1 year vs. 1+ years), and % < 1 year olds, 2008–2018*



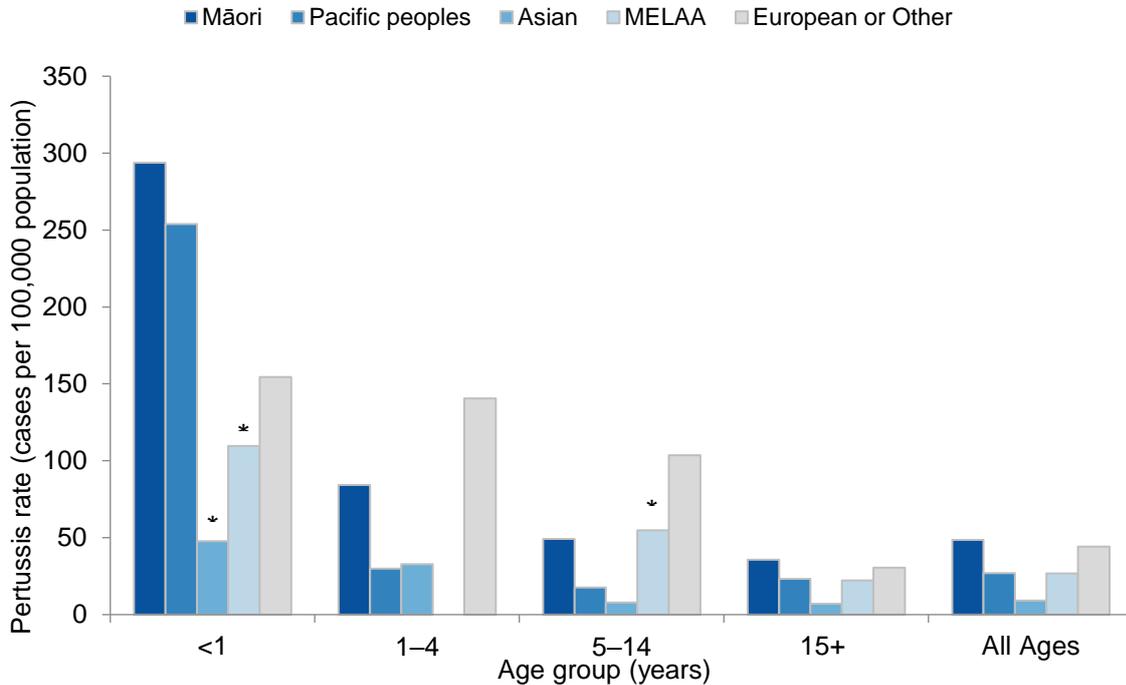
Note: Includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates.

* Rate for 2018 is an annualised rate. As this is an estimate for the year based on currently available data, it may differ from non-annualised rates presented elsewhere in this report for these age groups.

Ethnicity

Pertussis rates by age group and ethnicity are shown in Figure 4.

Figure 4: Pertussis rate (cases per 100,000 population) by age group and ethnicity, 1 January–27 July 2018



Note: Notifications 1 January–27 July 2018, includes confirmed, probable and suspect cases only. Ethnicity is prioritised. Denominator data used to determine disease rates for ethnic groups are based on the proportion of people in each ethnic group from the estimated resident 2013 Census population applied to the 2016 mid-year population estimates from Statistics New Zealand.

MELAA: Middle Eastern/Latin American/African.

* Rate based on fewer than five cases.

District health board

The numbers and rates of pertussis notifications by DHB are shown in Table 3 below.

Table 3: Number of (confirmed, probable and suspect) pertussis notifications, rate (cases per 100,000 population) and hospitalisations by district health board, 2018

District health board	Total for 2018 ¹					30 June–27 July 2018 (weeks 27–30)		
	Cases	Rate ²	Hosp ³	Cases ⁴	% ⁵	Cases	Hosp ³	<1 year old ⁴
Northland	69	39.3	5	9	13.0	3	0	0
Waitemata	141	23.3	16	5	3.5	11	1	0
Auckland	134	25.6	13	3	2.2	16	1	0
Counties Manukau	115	21.0	23	12	10.4	10	1	1
Waikato	222	54.3	18	13	5.9	21	3	2
Lakes	75	69.1	1	0	0.0	7	0	0
Bay of Plenty	211	91.0	4	6	2.8	6	0	2
Tairāwhiti	10	20.6	0	0	0.0	0	0	0
Taranaki	7	5.9	1	0	0.0	0	0	0
Hawke's Bay	70	42.7	3	6	8.6	0	0	0
Whanganui	8	12.5	0	0	0.0	0	0	0
MidCentral	34	19.3	7	6	17.6	0	0	0
Hutt Valley	52	35.2	1	0	0.0	2	0	0
Capital & Coast	128	40.9	6	10	7.8	13	0	1
Wairarapa	36	80.9	0	0	0.0	0	0	0
Nelson Marlborough	264	177.4	3	19	7.2	17	0	2
West Coast	107	329.2	0	0	0.0	22	1	1
Canterbury	129	23.4	9	12	9.3	8	0	0
South Canterbury	17	28.5	3	1	5.9	1	0	0
Southern	70	21.6	2	4	5.7	6	0	1
Overall	1899	39.6	115	106	5.6	143	7	10

¹ Cumulative notifications 1 January–27 July 2018.

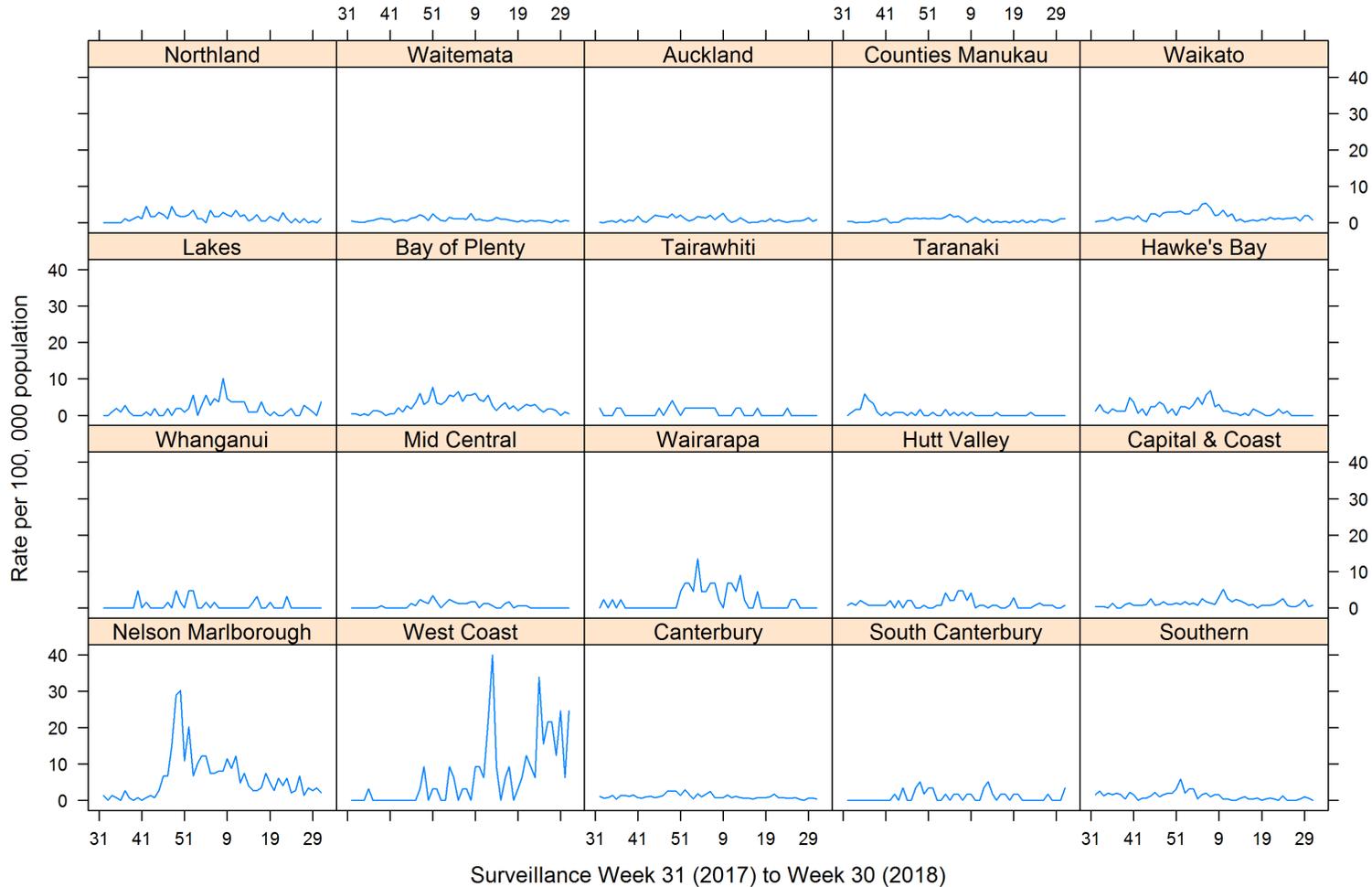
² Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.

³ Number of notified cases that were hospitalised.

⁴ Number of notified cases aged <1 year.

⁵ Percentage of notified cases that were aged <1 year.

Figure 5: Pertussis rates per 100,000 population by DHB, surveillance week 31 of 2017 to week 30 of 2018



Note: Notifications 29 July 2017–27 July 2018, includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2017 mid-year population estimates.

This report is available at: <http://www.surv.esr.cri.nz/surveillance/PertussisRpt.php>