Science for Communities

PERTUSSIS REPORT 13 January 2018 –9 February 2018

Data contained within this fortnightly report is based on information recorded on EpiSurv by public health service staff as at 20 February 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 decrease in pertussis notifications for the current four weeks (weeks 3–6, 2018) compared with the previous four weeks (weeks 51–2) in 2017/18.
- A significant increase in pertussis notifications for the current four weeks (weeks 3–6, 2018) compared with the same four surveillance weeks in 2017.

Summary

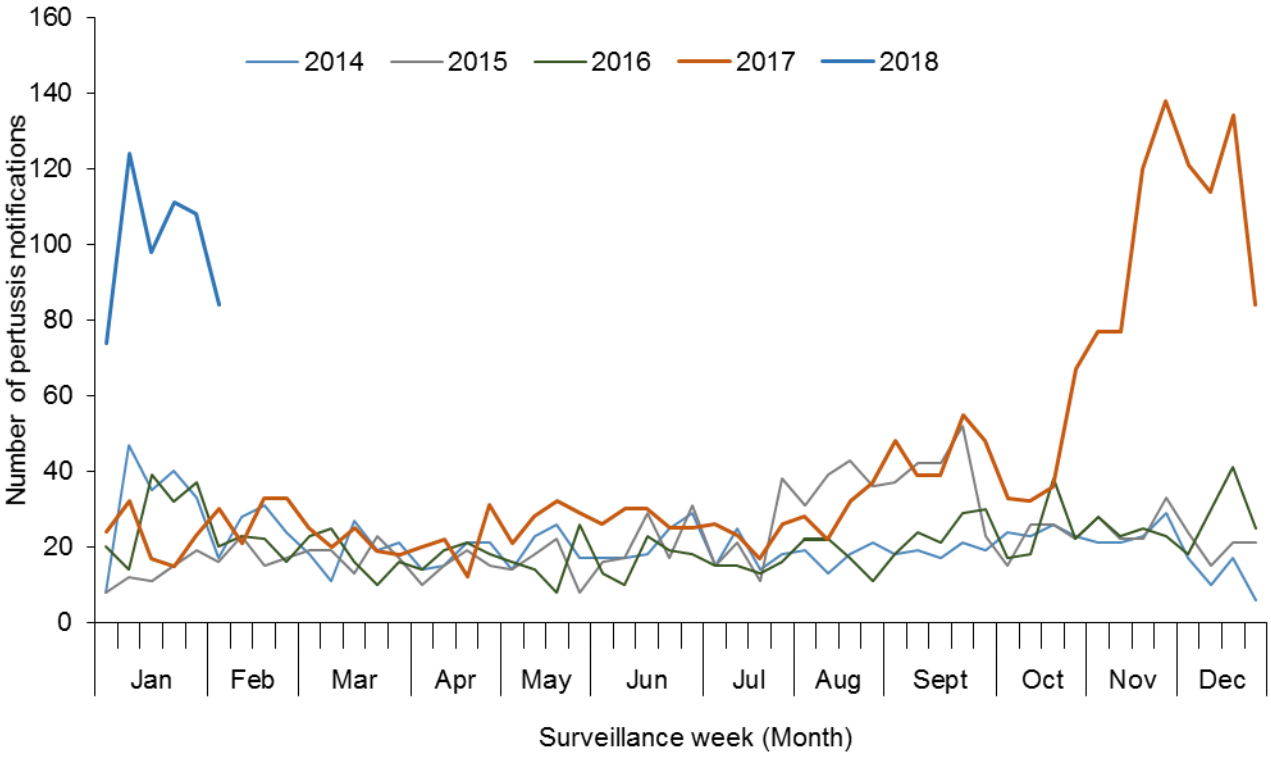
- In the past four surveillance weeks (weeks 3–6, 13 January 2018 –9 February 2018), 401 cases of pertussis were notified (98, 111, 108 and 84 cases, consecutively – Figure 1).[1] This included 268 confirmed, 123 probable, and 10 suspect cases. This is significantly higher than the 85 cases reported in the same four surveillance weeks in 2017 (Table 3). In the past four surveillance weeks in 2018, 24 (6.0%) cases were aged less than 1 year and 11 of these cases were hospitalised. Of all 401 cases, 30 cases were hospitalised and no deaths were reported.
- From 1–9 February 2018, there were a total of 662 confirmed, probable and suspect cases of pertussis notified (14.1 cases per 100,000). Of the 662 cases, 36 cases (5.4%) were aged less than 1 year, of which 20 (55.6%) were hospitalised (Table 1). Of all 662 cases, 46 cases (6.9%) were hospitalised.
- From 1–9 February 2018, the highest reported pertussis rates were among the less than 1 year and 1–4 years age groups (60.8 and 39.5 per 100,000, respectively). The ethnic groups with the highest notification rates were Māori (15.9 per 100,000, 111 cases) followed by European or Other (13.3 per 100,000) (Figure 4). The highest single number of cases was reported in the European or Other ethnic group (414 cases).
- From 1–9 February 2018, the highest numbers of pertussis cases were reported by Waikato and Nelson Marlborough DHBs (76 cases each), followed by Bay of Plenty (71 cases) DHB (Table 3). The DHB with the highest rate was Nelson Marlborough DHB (51.9 per 100,000), followed by Wairarapa (41.3 per 100,000, 18 cases), and Bay of Plenty (31.3 per 100,000) DHBs.
- From the beginning of the current national outbreak period (including data commencing 16 October 2017) to the end of 2017 there have been a total of 1000 cases (591 confirmed, 386 probable, and 23 suspect cases). There are still 3 cases under investigation.
- This report summarises pertussis notifications for the period from 1 January 2018 to 9 February 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 (13 January 2018 –9 February 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 9 February 2018) are shown in Figure 1 below.

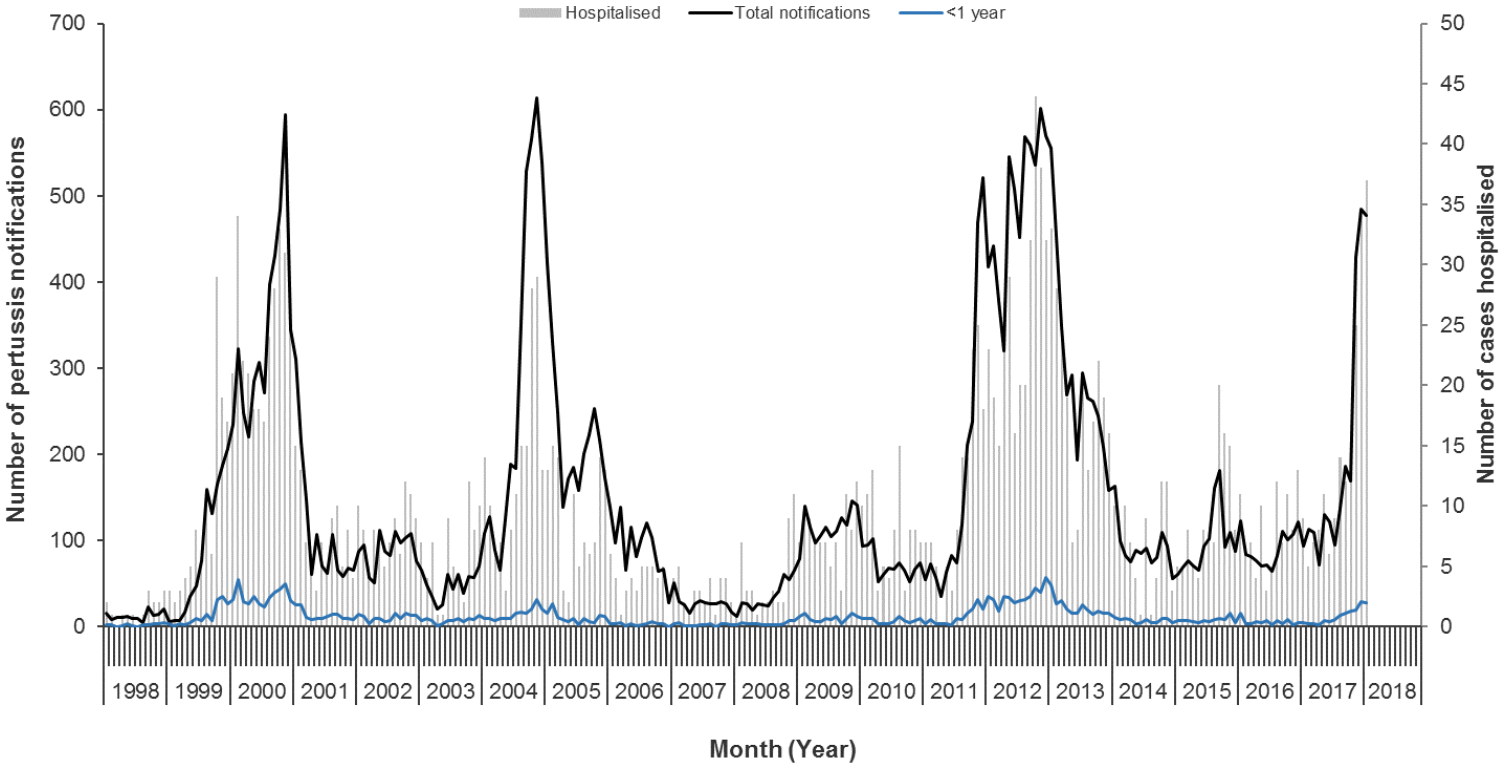
Figure 1: Number of pertussis notifications by week reported, 2014–2018



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 in those aged less than 1 year between January 1998 and January 2018. A four-to- five-year cycle can be seen with large peaks in notifications in years 2000, 2004, 2011/12 and at the end of 2017.

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



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 below 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–9 February 2018

	Total for 2018[1]		Hospitalised[1]	
Age group (years)	Number of cases	Rate[2]	Number of cases	Percent (%)
<1	36	60.8	20	55.6
1–4	97	39.5	6	6.2
5–9	88	27.3	1	1.1
10–14	65	22.1	1	1.5
15–19	30	9.4	1	3.3
20+	346	10.0	17	4.9
All ages	662	14.1	46	6.9

[1] Cumulative total 1 January–9 February 2018
[2] Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates.

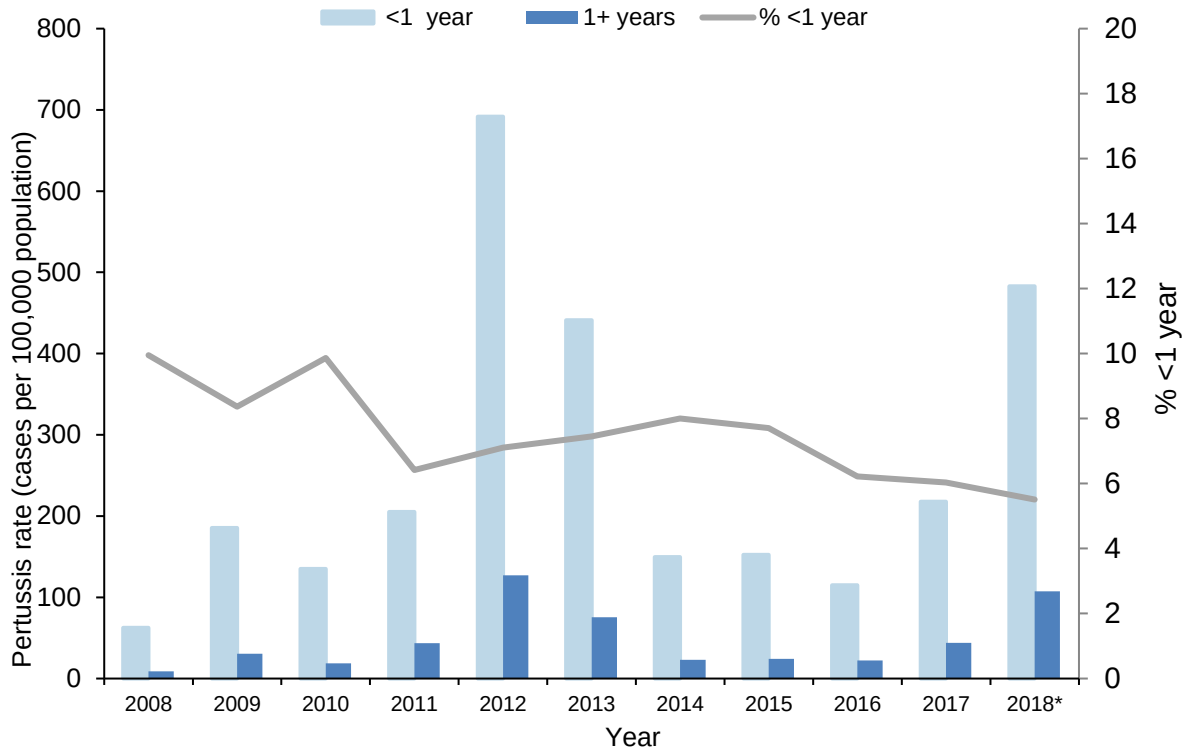
Table 2: Number of (confirmed, probable and suspect) pertussis notifications and hospitalisations in surveillance weeks 3–6 in 2018, compared with the same period in 2017

	Recent four surveillance weeks in 2018 (weeks 3–6)[1]		Same four surveillance weeks in 2017 (weeks 3–6)[2]	
Age group (years)	Number of cases	Cases hospitalised	Number of cases	Cases hospitalised
<1	24	11	3	1
1–4	65	4	12	0
5–9	52	1	16	0
10–14	40	1	2	0
15–19	13	1	2	0
20+	207	12	50	4
All ages	401	30	85	5

[1] 13 January–9 February 2018
[2] 14 January–10 February 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

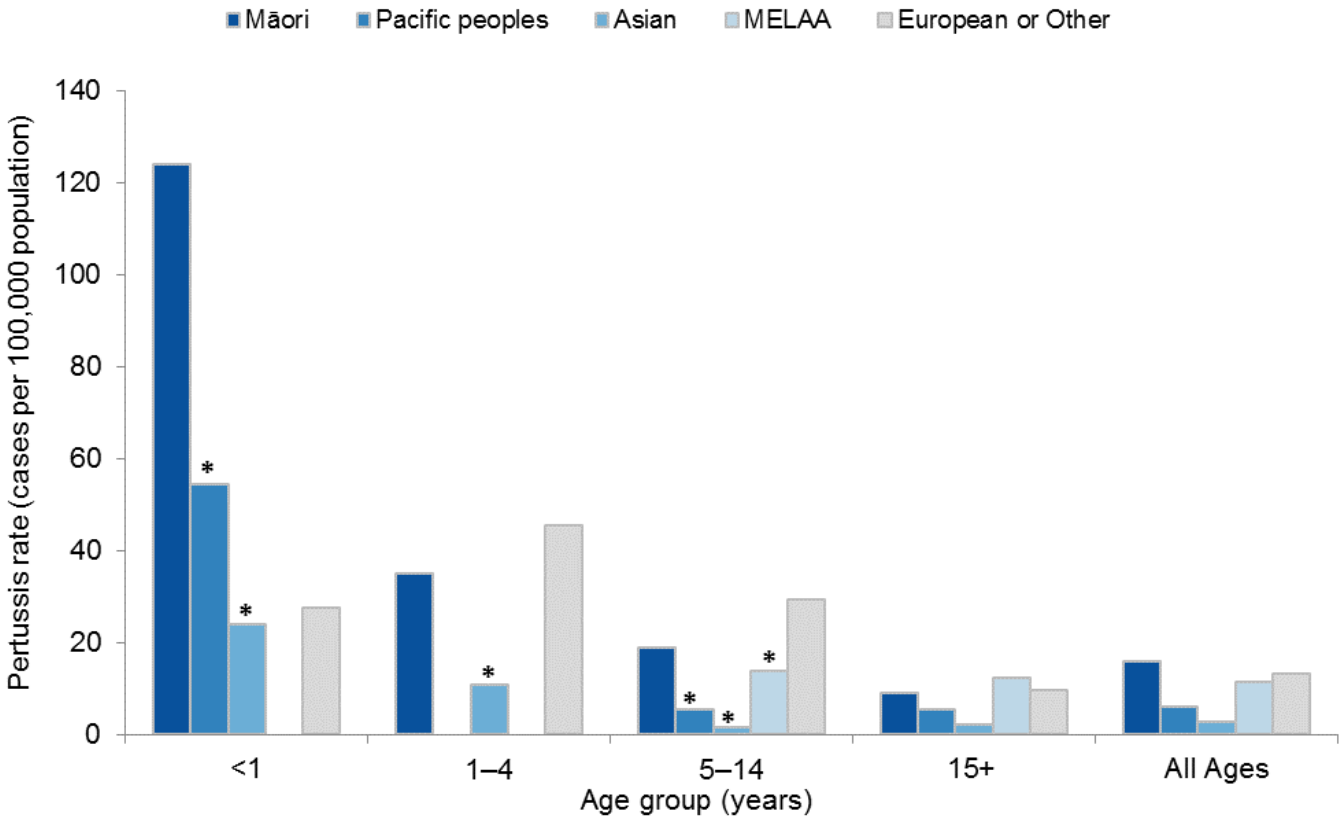


Note: Includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using mid-year population estimates.
* Rate for 2018 is an annualised rate. As this is an estimate for the year based on currently available data, it may differ from non-annualised rates 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 – February 9 2018



Note: Notifications 1–9 February 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

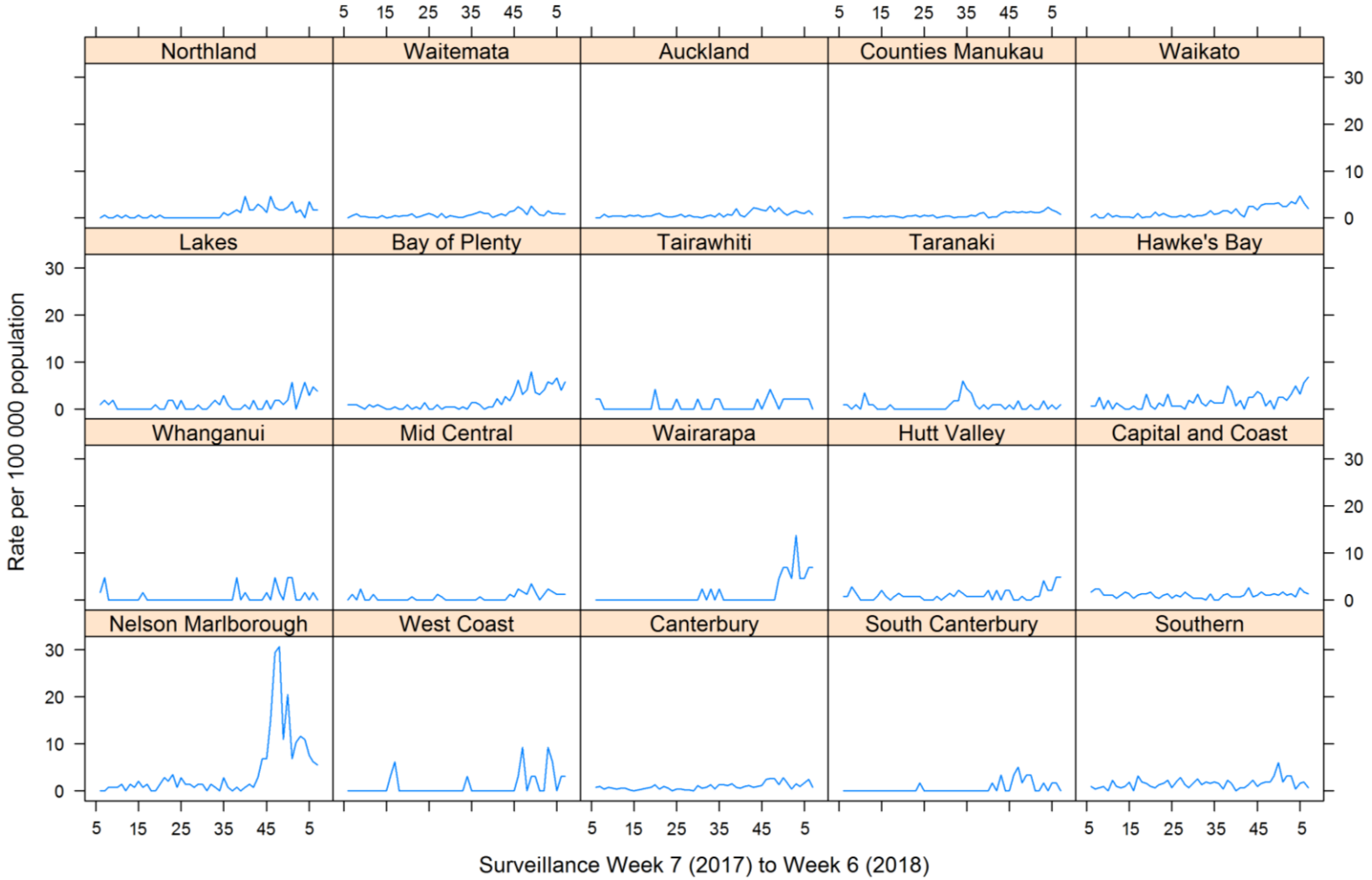
The numbers and rates of pertussis notifications by DHB are shown in Table 4 below.

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

	Total for 2018[1]					13 January 2017 – 9 February 2018		
	Total			<1 year old[1]				
District health board	Cases	Rate[2]	Hosp[3]	Cases[4]	%[5]	Cases	Hosp[3]	<1 year old[4]
Northland	16	9.3	2	3	18.8	12	0	1
Waitemata	34	5.8	5	2	5.9	22	4	2
Auckland	36	7.1	5	1	2.8	23	5	1
Counties Manukau	46	8.6	7	2	4.3	32	5	2
Waikato	76	19.0	5	5	6.6	52	3	2
Lakes	21	19.7	0	0	0.0	18	0	0
Bay of Plenty	71	31.3	3	2	2.8	49	3	2
Tairawhiti	5	10.5	0	0	0.0	3	0	0
Taranaki	4	3.4	0	0	0.0	2	0	0
Hawke's Bay	41	25.4	3	5	12.2	33	3	5
Whanganui	2	3.2	0	0	0.0	2	0	0
MidCentral	15	8.6	3	2	13.3	9	2	1
Hutt Valley	27	18.5	1	0	0.0	20	0	0
Capital & Coast	26	8.5	5	4	15.4	19	4	3
Wairarapa	18	41.3	0	0	0.0	10	0	0
Nelson Marlborough	76	51.9	1	5	6.6	44	0	3
West Coast	7	21.5	0	0	0.0	4	0	0
Canterbury	41	7.6	0	1	2.4	31	0	1
South Canterbury	3	5.1	0	0	0.0	2	0	0
Southern	34	10.7	2	1	2.9	14	1	1
Overall	599	12.8	42	33	5.5	401	30	24

[1] Cumulative notifications 1 January–9 February 2018.
[2] Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.
[3] Number of notifications that were hospitalised.
[4] Number of notifications in the <1 year age group.
[5] Percentage of notifications that were <1 year age group

Figure 4: Pertussis rates per 100,000 population by DHB, surveillance weeks 7 of 2017 to week 6 of 2018



Note: Notifications 1 January 2017–09 February 2018, includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.

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