

# PERTUSSIS REPORT

## 31 August–27 September 2024

This report summarises pertussis notifications for the current four-week period, 31 August–27 September, and since pertussis activity returned to pre-pandemic levels (from 28 April 2024). It includes the distribution of cases by time, region, district, age group and prioritised ethnicity. Four-weekly rates are presented to enable comparisons between groups and over time. This report supplements the [Pertussis dashboard](#) which is updated weekly.

Data contained within this fortnightly report is based on information recorded in EpiSurv as at 11am on 02 October 2024. Changes made to EpiSurv after this time will not be reflected here. Data presented may be further updated and should be regarded as provisional. Cases still under investigation are not included in this report. Because these cases are still to be classified, case numbers may change in future reports.

## Summary

Pertussis activity in New Zealand has returned to pre-COVID-19 pandemic levels in 2024 after four years with very low activity. There is a high risk of a pertussis epidemic occurring this year due to reduced population immunity. Pertussis epidemics historically occur every 3 to 5 years in New Zealand (with the last epidemic ending in 2019).

In the past four surveillance weeks (weeks 36–39, 31 August–27 September 2024):

- there were 179 cases (155 confirmed, 23 probable and 1 suspect) notified in EpiSurv. This comprises 28, 36, 56 and 59 cases, respectively;
- the four weekly notification rate was 3.4 per 100,000, compared with 1.3 per 100,000 for the previous four-week period (surveillance weeks 32–35);
- eight cases were hospitalised and no deaths were reported;
- nine cases (5.0%) were aged less than 1 year, of which three (33.3%) were hospitalised;
- the highest rates were among infants aged less than 1 year (15.7 per 100,000, 9 cases), followed by children aged 5–9 years (14.2 per 100,000, 46 cases);
- the ethnic groups with the highest notification rates were Middle Eastern/Latin American/African (7.9 per 100,000, 6 cases), followed by Māori (5.6 per 100,000, 49 cases), and Pacific peoples (4.0 per 100,000, 14 cases);
- the region with the highest rate was Central (7.1 per 100,000, 70 cases) followed by Northern (3.0 per 100,000, 60 cases), Te Waipounamu (2.6 per 100,000, 32 cases), and Te Manawa Taki (1.6 per 100,000, 17 cases);
- there have been seven outbreaks (5 school, 1 workplace and 1 other). Overall, 69 cases (38.5%) are associated with outbreaks.

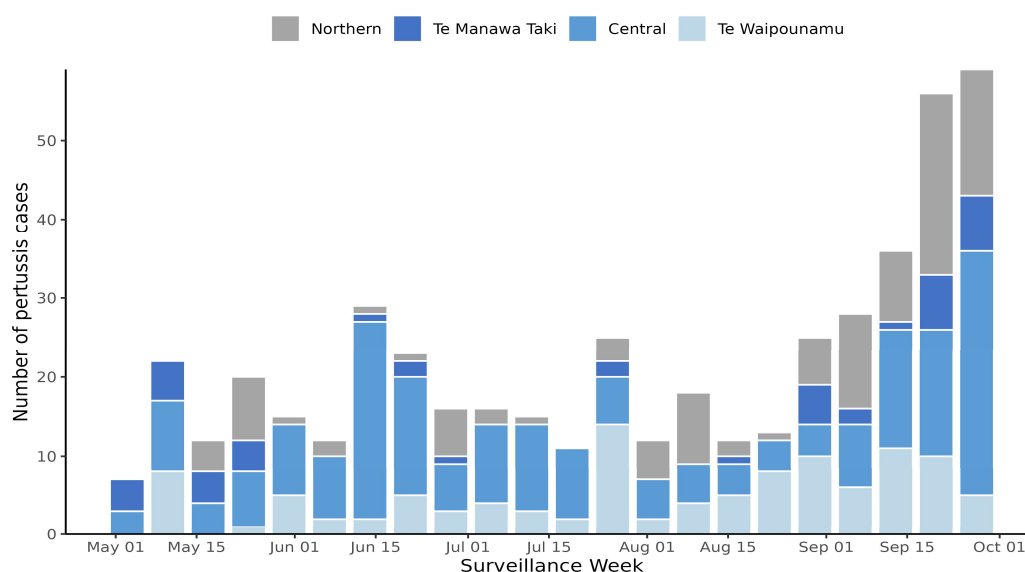
Since 28 April (to 27 September 2024):

- a total of 482 confirmed, probable and suspect cases of pertussis were notified;
- overall, 37 cases (7.7%) were hospitalised and there have been no deaths;
- of the 26 cases (5.4%) aged less than 1 year, 16 (61.5%) were hospitalised.

## Trends in pertussis cases

Since returning to pre-COVID-19 levels in early May, weekly pertussis case numbers were fairly stable until August but have increased each week throughout September (Figure 1).

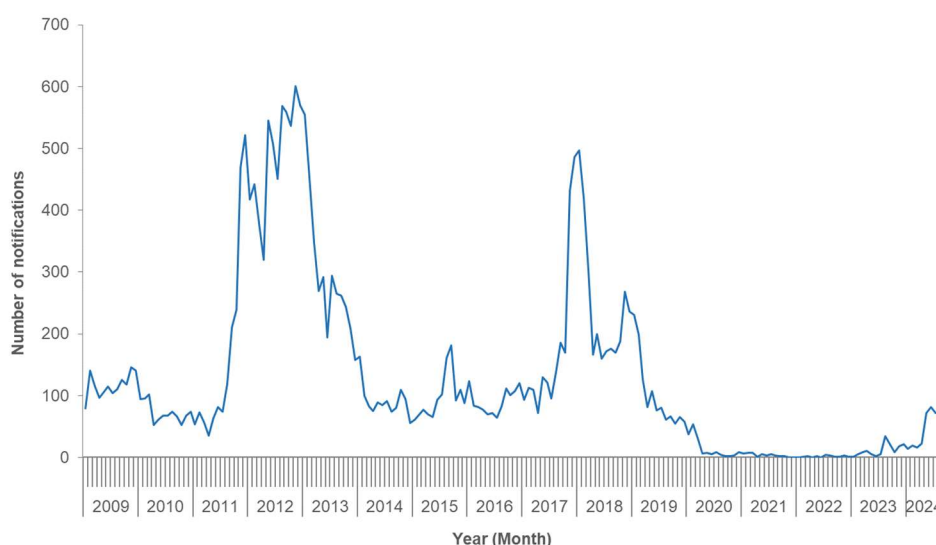
**Figure 1. Pertussis cases by week and region, 28 April–27 September 2024**



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

Figure 2 shows monthly pertussis cases since 2009. This shows two national outbreaks occurring in 2011–2014, and 2017–2019. Pertussis activity reduced as a result of COVID-19 response measures in 2020–2022, resurging to pre-COVID-19 levels in 2024 as seen overseas. National outbreaks have historically occurred every 3–5 years in New Zealand.

**Figure 2. Pertussis cases by month, January 2009–August 2024**



Note: Data for September are not yet presented as not yet complete.

## Cases by age

In the past four weeks, rates were highest among infants less than 1 year followed by children aged 5–9 years and 10–14 years (Table 2). Infants under 1 year are most vulnerable to severe disease, with a high proportion requiring hospitalisation.

**Table 2: Number and rate of pertussis cases and hospitalisations by age group**

Age Group (years)	31 August–27 September 2024			28 April–27 September 2024	
	Cases <sup>1</sup>	Rate <sup>2</sup>	Hospitalised	Cases <sup>1</sup>	Hospitalised
<1	9	15.7	3	26	16 (61.5%)
1–4	18	7.3	0	47	4 (8.5%)
5–9	46	14.2	0	77	2 (2.5%)
10–14	36	10.5	0	89	2 (2.2%)
15–19	17	5.2	0	56	0
20–64	50	1.6	4	172	8 (4.6%)
65+	3	-	1	15	5 (33.3%)
<b>Total</b>	<b>179</b>	<b>3.4</b>	<b>8</b>	<b>482</b>	<b>37 (7.7%)</b>

<sup>1</sup> Includes confirmed, probable and suspect cases only

<sup>2</sup> Four-week rate of pertussis cases per 100,000 population calculated using 2023 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

## Cases by Ethnicity

The ethnic group with the highest rate in the past four weeks was MELAA (7.9 per 100,000) followed by Māori and Pacific peoples (5.6 and 4.0 per 100,000, respectively).

Hospitalisation rates since 28 April were highest among Pacific peoples and those of Asian ethnicity.

**Table 3: Number and rate of pertussis cases by ethnicity**

Ethnicity	31 August–27 September 2024		28 April–27 September 2024	
	Cases <sup>1</sup>	Rate <sup>2</sup>	Cases <sup>1</sup>	Hospitalised
Māori	49	5.6	99	13 (13.1%)
Pacific peoples	14	4.0	36	9 (25.0%)
Asian	6	0.8	22	4 (18.2%)
Middle Eastern/Latin American/African	6	7.9	8	1 (12.5%)
European or Other	101	3.2	314	10 (3.2%)
Unknown	3	-	3	0

Note: Ethnicity is prioritised.

<sup>1</sup> Includes confirmed, probable and suspect cases only

<sup>2</sup> Four-week rate of pertussis cases per 100,000 population calculated using 2023 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

## Cases by district

Hawkes Bay District reported the highest rate (26.0 per 100,000) in the past four weeks followed by Taranaki and Wairarapa districts (130.2 and 9.8 per 100,000). The highest number of hospitalisations since 28 April was in Counties Manukau District.

**Table 1: Number of pertussis cases, rate and hospitalisations by health district (continues on next page)**

District	31 August–27 September			28 April–27 September 2024	
	Cases <sup>1</sup>	Rates <sup>2</sup>	Hospitalised	Cases <sup>1</sup>	Hospitalised
Northland	16	7.8	2	19	3
Waitemata	10	1.5	0	18	1
Auckland	22	4.5	2	27	2
Counties Manukau	12	1.9	3	48	10
Waikato	0	-	0	8	2
Lakes	0	-	0	4	0
Bay of Plenty	0	-	0	7	1

District	31 August–27 September			28 April–27 September 2024	
	Cases <sup>1</sup>	Rates <sup>2</sup>	Hospitalised	Cases <sup>1</sup>	Hospitalised
Tairāwhiti	0	-	0	4	1
Taranaki	17	13.2	0	23	1
Hawke's Bay	48	26.0	0	62	1
Whanganui	0	-	0	0	0
MidCentral	1	-	0	2	1
Hutt Valley	4	-	0	27	3
Capital and Coast	12	3.7	1	58	7
Wairarapa	5	9.8	0	65	2
Nelson Marlborough	1	-	0	4	0
West Coast	0	-	0	1	0
Canterbury	29	4.8	0	95	1
South Canterbury	0	-	0	5	1
Southern	2	-	0	5	0

<sup>1</sup> Includes confirmed, probable and suspect cases only

<sup>2</sup> Four-week rate of pertussis cases per 100,000 population calculated using 2023 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

## Outbreaks

In the past four weeks, cases have been associated with seven outbreaks as described in Table 5.

**Table 5: Number of pertussis outbreaks by setting and associated cases, 31 August–27 September 2024**

Outbreak setting	Number of outbreaks	Median cases (range)
School	5	4 (1–21)
Workplace	1	4
Other	1	20
<b>Total</b>	<b>7</b>	<b>-</b>

Note: household outbreaks are not included.

## Appendix – Case definition

An abbreviated version of the case definition in place at the time of preparing this report is provided below. The current case classification used in Aotearoa New Zealand can be found on the [Health New Zealand | Te Whatu Ora Communicable Disease Control Manual](#) site.

### *Clinical description*

A clinically compatible case characterised by cough and one or more of: paroxysms of cough, cough ending in vomiting, cyanosis or apnoea, or inspiratory whoop.

### *Laboratory test for diagnosis*

Laboratory definitive evidence for a confirmed case requires isolation of *Bordetella pertussis* or detection of *B. pertussis* nucleic acid, preferably from a nasopharyngeal swab.

Laboratory suggestive evidence for a probable case requires: *B. pertussis* toxin IgG test of >100 IU/ml or a significant increase in antibody levels between paired sera at the same laboratory. Serology should only be requested for public health purposes after consultation between the Medical Officer of Health and the local microbiologist.

### *Case classification*

- **Suspect (in children under 5 years of age):** any paroxysmal cough with whoop, vomit or apnoea for which there is no other known cause.
- **Probable:** a clinically compatible illness where the cough is lasting longer than 2 weeks. However, in situations where serology has been requested after consultation between the Medical Officer of Health and the local microbiologist, a clinically compatible illness with laboratory suggestive evidence will also be considered as probable.
- **Confirmed:** a clinically compatible illness accompanied by laboratory definitive evidence, or is epidemiologically linked to a confirmed case.