

PERTUSSIS REPORT

14 December 2024–10 January 2025

This fortnightly report summarises pertussis (whooping cough) notifications for the current four-week period, 14 December 2024–10 January 2025, and cumulative numbers since the onset of a national pertussis epidemic on 19 October 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 report is based on information recorded in EpiSurv as at 11am on 15 January 2025. 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 under investigation cases are still to be classified, case numbers may change in future reports.

Published 16 January 2025

Summary

- A national pertussis epidemic was declared on 22 November 2024 following a sustained increase in cases throughout New Zealand beginning on 19 October 2024.
- There has been a decrease in case numbers in the 4-week period 14 December 2024–10 January 2025 compared to the prior 4-week period. Reduced case ascertainment due to the Christmas holiday period has contributed to this decrease.
- The number of hospitalisations is similar to the prior 4-week period.

In the past four surveillance weeks (weeks 51/2024–1/2025, 14 December 2024–10 January 2025):

- there were 402 cases (291 confirmed and 111 probable) notified in EpiSurv, compared with 568 cases for the prior four weeks (weeks 47–50). This comprises 147, 75, 72 and 108 cases respectively in weeks 51/2024–1/2025;
- 41 cases were hospitalised, compared with 38 cases in weeks 47–50;
- one death in an infant was reported;
- 36 cases (9.0%) were aged less than 1 year, of which 20 (55.6%) were hospitalised;
- notification rates were highest among infants aged less than 1 year (63.0 per 100,000, 36 cases), followed by children aged 1–4 (23.7 per 100,000, 58 cases);
- the ethnic group with the highest notification rate was Māori (12.5 per 100,000, 109 cases), followed by European or Other (7.5 per 100,000, 241 cases), and Pacific peoples (7.1 per 100,000, 25 cases);

- the region with the highest rate was Central (11.6 per 100,000, 115 cases) followed by Te Waipounamu (11.0 per 100,000, 135 cases), Te Manawa Taki (8.8 per 100,000, 91 cases), and Northern (3.1 per 100,000, 61 cases).

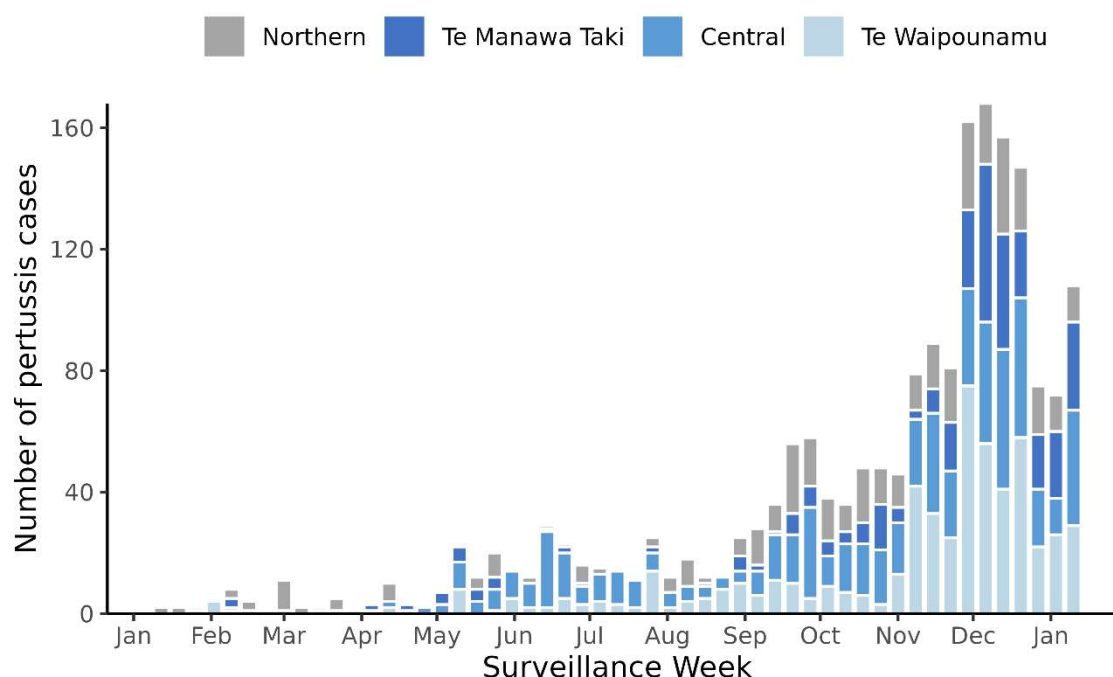
From the beginning of the current national epidemic on 19 October 2024 to 10 January 2025:

- a total of 1232 confirmed, probable and suspect cases of pertussis were notified;
- overall, 101 cases (8.2%) were hospitalised and there has been one death;
- of the 87 cases (7.1%) aged less than 1 year, 48 (55.2%) were hospitalised.

Trends in pertussis cases

A national epidemic was declared on 22 November following a sustained increase in cases throughout New Zealand beginning 19 October 2024 (Figure 1). Numbers continued to increase in November and December but have declined in recent weeks. Reduced case ascertainment due to the Christmas holiday period has contributed to this decrease.

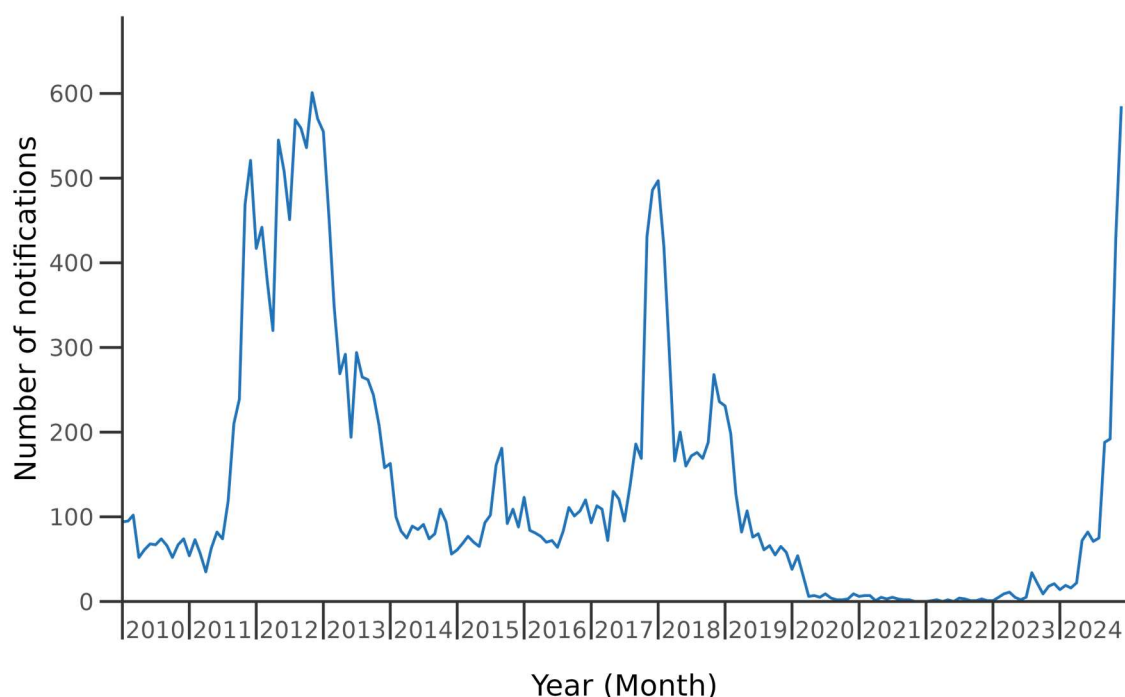
Figure 1. Pertussis cases by week and region, 6 January 2024–10 January 2025



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

Figure 2 shows monthly pertussis cases since 2010. This shows two national epidemics occurring in 2011–2013, and 2017–2019. National epidemics have historically occurred every 3–5 years in New Zealand. Pertussis activity reduced as a result of COVID-19 response measures in 2020–2022, returning to pre-pandemic levels in 2024 as seen overseas. Epidemic level activity began in late 2024 and monthly case numbers reported in December 2024 reached levels last seen during 2012/2013.

Figure 2. Pertussis cases by month, January 2010–December 2024



Note: Data for January are not presented as the month is not yet complete.

Cases by age

In the past four weeks, rates were highest among infants aged less than 1 year, followed by children aged 1–4 years (Table 1). Infants aged less than 1 year are most vulnerable to severe disease, with a high proportion requiring hospitalisation. Among infants, those aged less than 2 months are at highest risk of severe disease and death..

Table 1: Number and rate of pertussis cases and hospitalisations by age group

Age Group (years)	Past 4 weeks			National epidemic to date	
	14 December 2024–10 January 2025			19 October 2024–10 January 2025	
	Cases ¹	Rate ²	Hospitalised	Cases ¹	Hospitalised
<1	36	63.0	20 (55.6%)	87	48 (55.2%)
1–4	58	23.7	4 (6.9%)	183	18 (9.8%)
5–9	61	18.9	1 (1.6%)	209	5 (2.4%)
10–14	52	15.2	5 (9.6%)	216	6 (2.8%)
15–19	27	8.3	0 (0.0%)	100	1 (1.0%)
20–64	145	4.7	8 (5.5%)	380	16 (4.2%)
65+	20	2.3	3 (15.0%)	54	7 (13.0%)
Unknown	3	–	0 (0.0%)	3	0 (0.0%)
Total	402	7.7	41 (10.2%)	1,232	101 (8.2%)

¹ Includes confirmed, probable and suspect cases only

² 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

In the past four weeks, the ethnic group with the highest notification rate was Māori (12.5 per 100,000), followed by European or Other (7.5 per 100,000), and Pacific peoples (7.1 per 100,000) (Table 2). Hospitalisation rates since 19 October were highest among Pacific peoples followed by Māori. Most pertussis hospitalisations occur in young infants, and the difference in hospitalisations by ethnicity is in part driven by a higher proportion of infant cases in Māori and Pacific peoples. Breakdowns of case numbers by age and ethnicity are available on the [ESR Pertussis dashboard](#).

Table 2: Number and rate of pertussis cases by ethnicity

Ethnicity	Past 4 weeks		National epidemic to date			
	14 December 2024–10 January 2025		19 October 2024–10 January 2025			
	Cases ¹	Rate ²	Cases ¹	Hospitalised	Cases <1yr	Hospitalised <1yr
Māori	109	12.5	378	50 (13.2%)	50	32 (64.0%)
Pacific peoples	25	7.1	68	15 (22.1%)	8	6 (75.0%)
Asian	16	2.0	36	2 (5.6%)	4	1 (25.0%)
European or Other	241	7.5	737	34 (4.6%)	24	9 (37.5%)
Unknown	11	-	13	0 (0.0%)	1	0 (0.0%)

Note: Ethnicity is prioritised.

¹ Includes confirmed, probable and suspect cases only

² 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

Cases were notified from all districts in the past four weeks. West Coast District reported the highest rate (48.6 per 100,000), followed by Whanganui (17.1 per 100,000). The highest number of hospitalisations since 19 October has been in Bay of Plenty District, followed by Waitemata.

Table 3: Number of pertussis cases, rate and hospitalisations by health district

District	Past 4 weeks			National epidemic to date	
	14 December 2024–10 January 2025			19 October 2024 –10 January 2025	
	Cases ¹	Rates ²	Hospitalised	Cases ¹	Hospitalised
Northland	13	6.4	0	70	4
Waitemata	25	3.9	2	60	10
Auckland	15	3.0	3	41	5
Counties Manukau	8	1.3	3	39	8
Waikato	22	4.8	1	64	8
Lakes	8	6.7	2	29	3
Bay of Plenty	38	13.6	7	110	13
Tairāwhiti	7	13.3	0	13	0
Taranaki	16	12.4	6	38	7
Hawke's Bay	28	15.2	2	84	9
Whanganui	12	17.1	2	27	7
MidCentral	15	7.8	1	49	1
Hutt Valley	19	11.7	3	45	4
Capital and Coast	35	10.7	1	112	4
Wairarapa	6	11.7	1	28	3
Nelson Marlborough	5	3.0	0	26	0
West Coast	16	48.6	3	43	5
Canterbury	59	9.8	3	146	5
South Canterbury	3	-	0	13	2
Southern	52	14.4	1	195	3

¹ Includes confirmed, probable and suspect cases only.

² 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.

Vaccination status of cases aged <12 months

Pertussis vaccination is funded in New Zealand during every pregnancy and as part of the childhood immunisation schedule. The primary series is given at 6 weeks, 3 months and 5 months. Together with the antenatal vaccine, this schedule aims to protect infants against pertussis infection, severe disease requiring hospitalisation, and death.

Table 4 shows the vaccination status of infant pertussis cases notified since the onset of the national epidemic and whether they were hospitalised. During this time, there have been no infants with 2 or more vaccine doses hospitalised.

Table 4: Vaccination status of cases aged <12 months, by age and hospitalisation, 19 October 2024–10 January 2025

	Hospitalised		Not Hospitalised	
Age Group	Not vaccinated for age ¹	Vaccinated for Age ¹	Not vaccinated for age ¹	Vaccinated for Age ¹
<2mths ²	17		5	
2–3mths	14	4	2	1
4–5mths	4	0	2	0
6–11mths	9	0	15	8

Note: table excludes 6 cases where vaccination status and/or hospitalisation status is unknown. Source: EpiSurv

¹ A case is considered to have received age-appropriate vaccine doses if they have received at minimum: 1 dose for cases aged 2-3 months; 2 doses for cases aged 4-5 months and 3 doses for cases aged 6-11 months.

² Vaccination information is not provided for infants <2 months as the first infant dose is offered at 6 weeks and protection takes 14 days to develop.

Note: Vaccine doses given <14 days prior to date of illness onset are excluded from this analysis as protection is expected to take 14 days to develop.

Appendix – Case definition

Note: This is the first report since the pertussis case definition was revised on 18 December 2024. The suspect case definition has been retired and the probable case definition has been amended to include cases who would have previously met the suspect classification (during an epidemic). Confirmed, probable and suspect cases are combined in this report and so it is expected that this change will not affect the reported numbers.

A 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 criteria

A clinically compatible illness is characterised by a new onset cough without a clear alternative cause and one or more of the following features:

- paroxysms of coughing
- cough ending in vomiting
- inspiratory whoop
- apnoea or cyanosis (in infants aged under 12 months).

Epidemiological criteria

An epidemiological link is established when there is contact between two people at a time when one of them is likely to be infectious AND the other has an illness which starts within 5 to 21 days after this contact AND at least one case in the chain of [epidemiologically linked](#) cases (which may involve many cases) has [laboratory definitive evidence of pertussis](#).

Laboratory criteria

Laboratory definitive evidence: Detection of *Bordetella pertussis* nucleic acid by polymerase chain reaction (PCR), OR Isolation of *B. pertussis*

Case classification

- **Confirmed:** a person who has laboratory definitive evidence; OR a person who has a clinically compatible illness AND who has an epidemiological link to a confirmed case.
- **Probable:** a person who has a clinically compatible illness AND either has a cough lasting 14 days or more OR exposure as part of an outbreak¹

¹an institutional outbreak or community-wide outbreak (when there is limited access to testing)

- **Under investigation:** a person who has been notified, but information is not yet available to classify further.
- **Not a case:** a person who has been investigated and subsequently found not to meet the case definition.