PERTUSSIS REPORT

25 January–21 February 2025

This fortnightly report summarises pertussis (whooping cough) notifications for the four-week period, 25 January–21 February 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 26 February 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 cases that are under investigation are still to be classified, case numbers may change in future reports.

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Summary

- A national pertussis epidemic was declared on 22 November 2024 following an increase in cases throughout New Zealand beginning on 19 October 2024.
- Case numbers and hospitalisations are slightly higher in the 4-week period 25 January–21 February 2025 compared to the prior 4-week period.

In the past four surveillance weeks (weeks 4–7, 25 January–21 February 2025):

- there were 407 cases (302 confirmed and 105 probable) notified in EpiSurv, compared with 388 cases for the prior four weeks (weeks 53/2024–3/2025) This comprises 131, 81, 100 and 95 cases, respectively in weeks 4–7;
- 45 cases were hospitalised, compared with 35 cases in weeks 53/2024–3/2025; no deaths were reported;
- 44 cases (10.8%) were aged less than 1 year, of which 23 (52.3%) were hospitalised;
- notification rates were highest among infants aged less than 1 year (76.0 per 100,000, 44 cases), followed by children aged 1–4 years (39.0 per 100,000, 95 cases);
- the ethnic group with the highest notification rate was Māori (16.2 per 100,000, 144 cases), followed by Pacific peoples (8.1 per 100,000, 29 cases), and European or Other (6.5 per 100,000, 207 cases);

- Central (9.9 per 100,000, 98 cases), Te Waipounamu (9.8 per 100,000, 124 cases), and Te Manawa Taki (8.2 per 100,000, 87 cases) regions had the highest rates. Rates in the Northern region were lower (4.8 per 100,000, 98 cases).

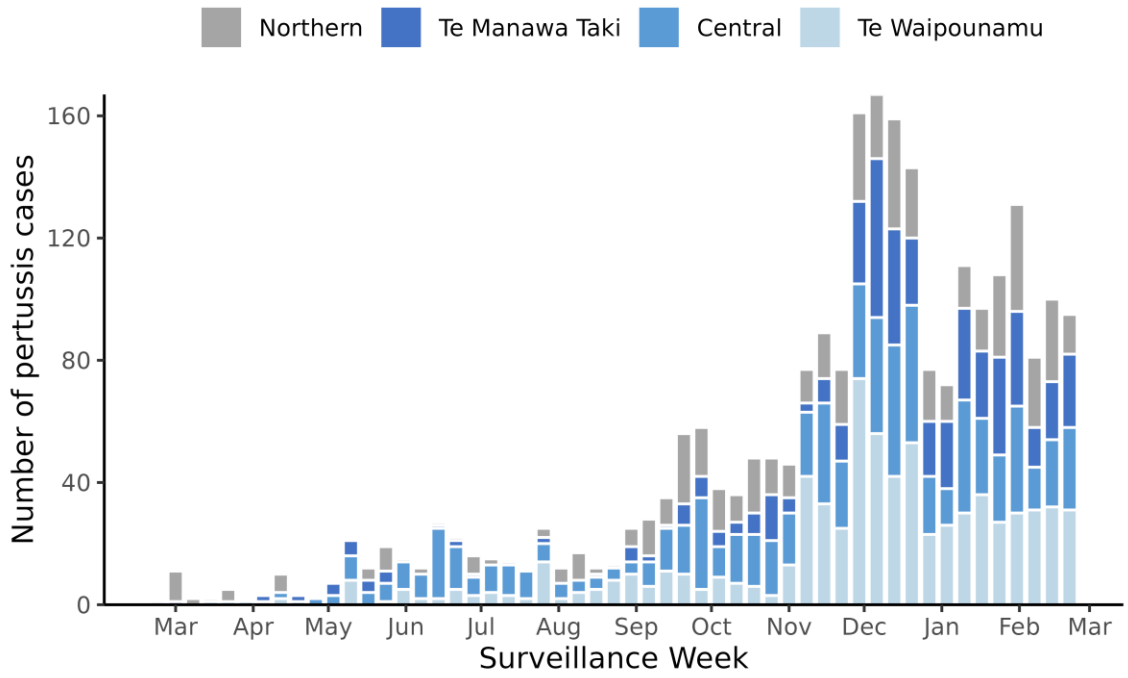
From the beginning of the current national epidemic on 19 October 2024 to 21 February 2025:

- a total of 1839 confirmed, probable and suspect[1] cases of pertussis were notified;
- overall, 162 cases (8.8%) were hospitalised and there has been one death;
- of the 140 cases (7.6%) aged less than 1 year, 78 (55.7%) were hospitalised.

Trends in pertussis cases

A national epidemic was declared on 22 November following a sustained increase in cases throughout New Zealand beginning on 19 October 2024 (Figure 1). Numbers continued to increase in November and December, peaking in the weeks leading up to Christmas. Numbers have varied between 81 and 131 cases since mid-January but remain lower than the December peak.

Figure 1. Pertussis cases by week and region, 12 months to 21 February 2025

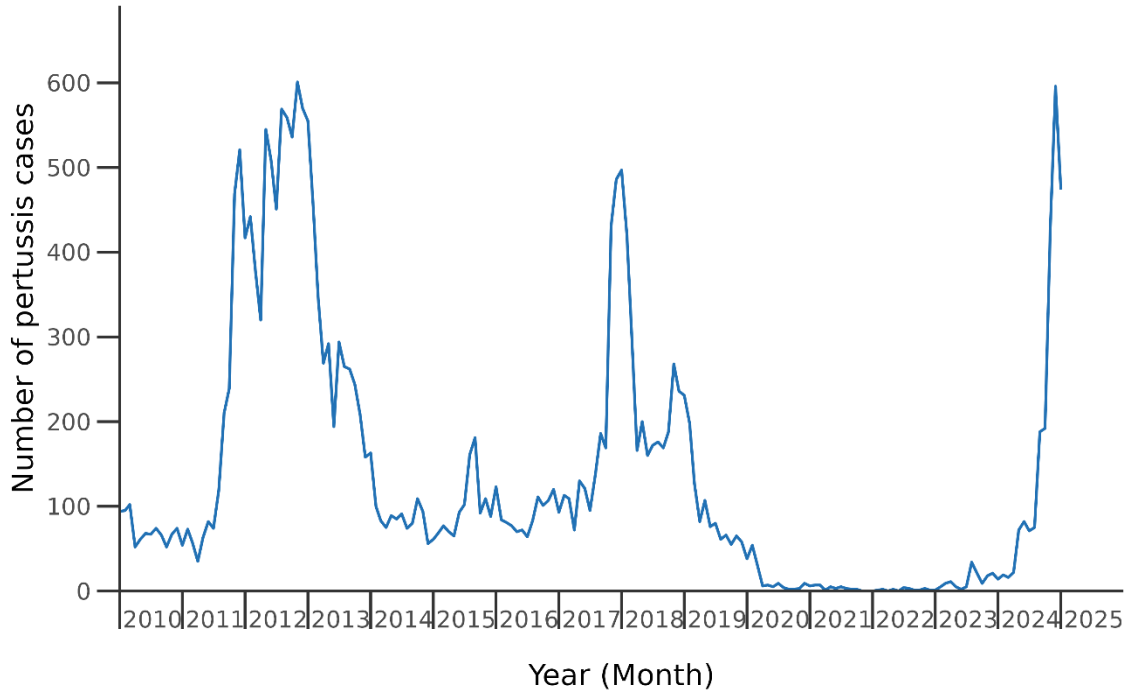


Note: includes confirmed, probable, and suspect cases only. Cases still under investigation are excluded.

[1] The suspect case definition was removed in mid-December 2024. Suspect cases notified prior to this change are included in this report.

Figure 2 shows monthly pertussis cases since 2010. This shows the current epidemic with case numbers in December equalling or exceeding the highest months seen during the two previous epidemics in 2011–2013, and 2017–2019.

Figure 2. Pertussis cases by month, January 2010–January 2025



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

Cases by age

In the past four weeks, notification 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	
	25 January–21 February 2025			19 October 2024–21 February 2025	
	Cases[1]	Rate[2]	Hospitalised	Cases[1]	Hospitalised
<1	44	76.0	23 (52.3%)	140	78 (55.7%)
1–4	95	39.0	5 (5.3%)	322	24 (7.5%)
5–9	53	16.1	2 (3.8%)	302	8 (2.6%)
10–14	33	9.5	2 (6.1%)	262	8 (3.1%)
15–19	20	5.9	1 (5.0%)	136	3 (2.2%)
20–64	139	4.4	9 (6.5%)	591	29 (4.9%)
65+	22	2.5	3 (13.6%)	85	12 (14.1%)
Unknown	1	–	0 (0.0%)	1	0 (0.0%)
Total	**407**	**7.6**	**45 (11.1%)**	**1,839**	**162 (8.8%)**

[1] Includes confirmed, probable and suspect cases only

[2] Four week rate of pertussis cases per 100,000 population calculated using 2024 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 (16.2 per 100,000, 144 cases), followed by Pacific peoples (8.1 per 100,000, 29 cases), and European or Other (6.5 per 100,000, 207 cases) (Table 2).

Hospitalisation rates since 19 October were highest among Māori and Pacific peoples, both overall and for cases <1 year of age.

Further 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			
	25 January–21 February 2025		19 October 2024–21 February 2025			
	Cases[1]	Rate[2]	Cases[1]	Hospitalised	Cases <1yr	Hospitalised <1yr
Māori	144	16.2	589	81 (13.8%)	88	56 (63.6%)
Pacific peoples	29	8.1	112	24 (21.4%)	11	7 (63.6%)
Asian	18	2.2	60	6 (10.0%)	4	1 (25.0%)
European or Other	207	6.5	1,054	49 (4.6%)	35	13 (37.1%)
Unknown	9	-	24	2 (8.3%)	2	1 (50.0%)

Note: Ethnicity is prioritised. European and Other includes the MELAA category.
[1] Includes confirmed, probable and suspect cases only
[2] Four week rate of pertussis cases per 100,000 population calculated using 2024 mid-year population estimates from Statistics New Zealand. Rate suppressed if based on fewer than five cases.

Cases by district

Tairāwhiti District reported the highest rate (22.5 per 100,000) in the past four weeks, followed by Northland (22.0 per 100,000). Rates in the Auckland region districts and Waikato are lower than for most other districts (Table 3).

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

District	Past 4 weeks			National epidemic to date	
	25 January–21 February 2025			19 October 2024–21 February 2025	
	Cases[1]	Rate[2]	Hospitalised	Cases[1]	Hospitalised
Northland	45	22.0	7	135	12
Waitematā	18	2.7	5	90	16
Auckland	18	3.5	4	67	9
Counties Manukau	17	2.7	2	66	13
Waikato	17	3.6	2	88	11
Lakes	19	15.8	2	63	5
Bay of Plenty	27	9.6	4	150	17
Tairāwhiti	12	22.5	1	33	2
Taranaki	12	9.2	4	59	13
Hawke's Bay	28	15.1	2	127	12
Whanganui	7	10.0	1	34	8
MidCentral	27	13.9	3	92	5
Hutt Valley	12	7.3	0	63	5
Capital and Coast	23	7.1	2	137	7
Wairarapa	1	-	0	28	3
Nelson Marlborough	29	17.3	0	62	0
West Coast	1	-	0	45	5
Canterbury	51	8.1	5	229	11
South Canterbury	2	-	0	17	4
Southern	41	11.2	1	254	4

[1] Includes confirmed, probable and suspect cases only.
[2] Four week rate of pertussis cases per 100,000 population calculated using 2024 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 beginning of the national pertussis epidemic and whether they were hospitalised. All but one hospitalised cases to date are either aged <4 months or have not received all age-appropriate pertussis vaccine doses.

Information about antenatal vaccination doses for pertussis cases <12 months is not currently available.

Table 4. Vaccination status of cases aged <12 months, by age and hospitalisation, 19 October 2024–21 February 2025

Age Group	Hospitalised		Not Hospitalised	
<2mths[1]	23		5	
	Not vaccinated for age[2]	Vaccinated for age[2]	Not vaccinated for age[2]	Vaccinated for age[2]
2–3mths	22	5	2	3
4–5mths	8	0	6	0
6–11mths	17	1	26	12

Note: table excludes 9 cases where vaccination status is unknown and 6 cases where hospitalisation status is unknown.
Source: EpiSurv

[1] 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.

[2] A case is considered to be vaccinated for age if they have received at minimum: 1 dose for cases 2 to <4 months; 2 doses for cases 4 to <6 months and 3 doses for cases 6-<12 months.

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: The pertussis case definition was revised on 18 December 2024. The suspect case definition was retired as part of this revision.

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 outbreak[1]

  [1]an 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.