

PERTUSSIS REPORT

January - November 2009 (Weeks 46 - 47)

This report includes cases of pertussis reported in EpiSurv up to midnight 20 November 2009. Data was extracted from EpiSurv at 11 am 24 November 2009.

There have been a total of 1215 pertussis notifications reported in EpiSurv since 3 January 2009, including 522 confirmed cases, 569 probable cases, 57 suspect cases, and 67 cases under investigation. Seventy nine cases were hospitalised. There have been no deaths reported. In the past two weeks, 59 (34 and 25 consecutively) new cases of pertussis were notified, including 26 confirmed cases, 12 probable cases, four suspect cases, and 17 cases under investigation. Three (one and two consecutively) hospitalisations were reported.

This report incorporates the temporal distribution of cases, and the distribution of cases by age, ethnicity (prioritised), and district health board (DHB), as well as hospitalisations. The case classification used in this report is specified in the appendix.

Temporal distribution of cases

Figure 1 shows the epidemic curve of total pertussis notifications for 2007, 2008 and 2009 (to date). A substantial increase in notifications, with weekly fluctuations is clearly visible for 2009 compared to the previous two years. Between weeks 38 and 44, total notifications remained relatively stable followed by a spike in notifications during week 45. For the last two weeks, numbers of notifications decreased steadily. However, the total number of notifications may change as cases are investigated.

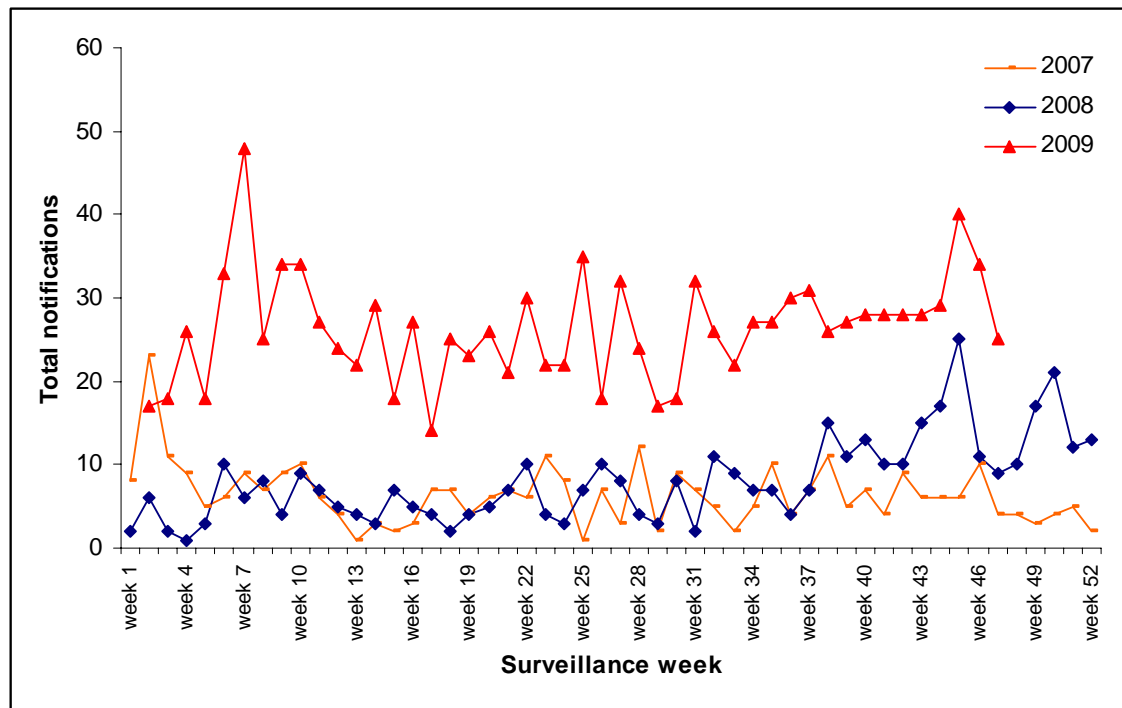


Figure 1: Comparative epidemic curves of total pertussis notifications by week reported during years 2007, 2008, and 2009, since January (surveillance week = Saturday to Friday inclusive).

Age distribution of cases

Pertussis notifications and associated age-specific rates, including new cases for the past two weeks, are shown in Table 1. Of the total cases since 3 January, the age-specific rate was highest in the less than one year age group (159.2 per 100 000 population, 102 cases), followed by the 1 to 4 (54.7 per 100 000 population, 129 cases) and 5 to 9 (43.8 per 100 000 population, 126 cases) year age groups. For the last two weeks, children aged less than one year had the highest age-specific rate (7.8 per 100 000 population, 5 cases).

Table 1: Pertussis cases and rates by age group since January 2009, including new cases in the past two weeks

Age group (Years)	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
<1	102	159.2	52	5	7.8	1
1 to 4	129	54.7	7	6	2.5	0
5 to 9	126	43.8	3	7	2.4	1
10 to 14	87	28.8	1	4	1.3	0
15 to 19	108	33.5	1	5	1.6	0
20 to 29	100	17.6	3	5	0.9	0
30 to 39	148	25.4	3	8	1.4	0
40 to 49	164	25.9	1	6	0.9	1
50 to 59	124	23.8	3	7	1.3	0
60 to 69	78	20.7	1	4	1.1	0
70+	49	13.2	4	2	0.5	0
Overall	1215	28.5	79	59	1.4	3

¹Age specific rate per 100,000 population, calculated using 2008 mid-year population estimates

²Cumulative notifications between 3 January and 20 November

Hosp: hospitalisation counts

Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Ethnicity

Pertussis notifications and rates by ethnicity are shown in Table 2. Of the 1100 cases with a known ethnicity, Europeans had the highest rate (32.6 per 100 000 population, 878 cases), followed by Maori ethnicity (24.2 per 100 000 population, 137 cases). In the last two weeks, Maori had the highest rate (2.1 per 100 000 population, 12 cases).

Table 2: Pertussis cases and rates by ethnicity (prioritised) since January 2009, including new cases in the past two

Ethnicity	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
Maori	137	24.2	20	12	2.1	1
Pacific Peoples	50	22.1	15	3	1.3	0
Other	35	9.3	4	1	0.3	0
European	878	32.6	32	34	1.3	2
Unknown	115	-	8	9	-	0
Overall	1215	30.2	79	59	1.5	3

¹Ethnic specific rates computed using the 2006 usually resident census population

²Cumulative notifications between 3 January and 20 November

Hosp: hospitalisation counts

Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Hospitalisations

There have been 79 hospitalisations reported in EpiSurv since 3 January 2009 including three in the past two weeks. Fifty two (65.8%) of the 79 hospitalisations were children aged less than one year of age. Of the three hospitalisations in the past two weeks, cases were distributed by age as follows less than one year (1 case), 5-9 years (1 case) and 40-49 years (1 case). Ethnicity was reported for all of the three hospitalised cases in the past two weeks; European ethnicity (2 cases) and Maori ethnicity (1 case). Counties Manukau and Auckland DHBs had the highest number of cumulative hospitalisations, 13 and 10, respectively. The distributions of hospitalisations by age group, ethnicity, and DHB are described in Table 1, Table 2, and Table 3, respectively.

Geographical distribution

The rates of pertussis notifications by DHB can be seen in Figure 2 and Table 3. The highest rates were recorded in West Coast DHB (86.5 per 100 000 population, 28 cases), followed by Nelson Marlborough (62.6 per 100 000 population, 85 cases) and Canterbury (57.5 per 100 000 population, 285 cases) DHBs. Canterbury DHB reported the highest number of notifications (285 cases) followed by Waikato DHB (190 cases). In the past two weeks, the highest number of notifications was reported in Waikato DHB (12 cases), followed by Canterbury DHB (9 cases).

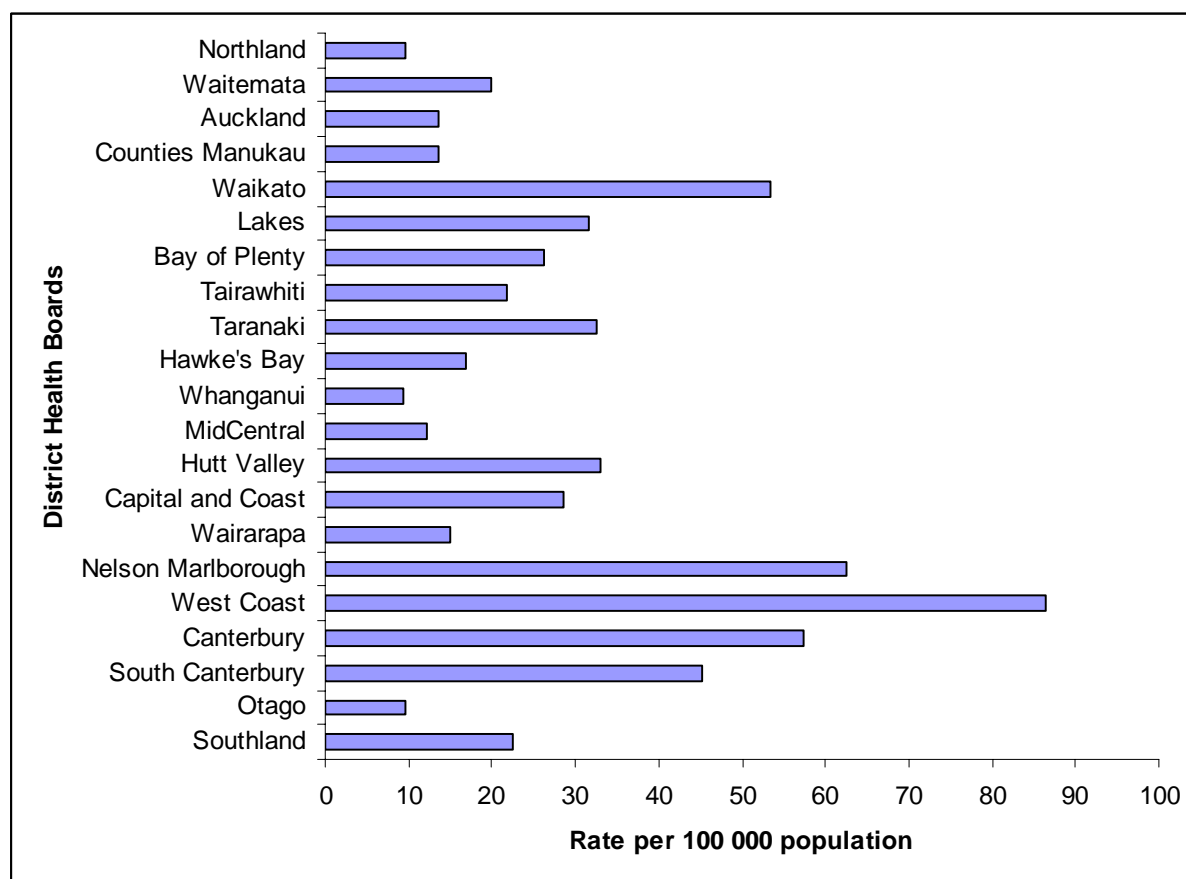


Figure 2: Geographical distribution of pertussis crude rates (cases per 100,000 population) since 3 January 2009.

Rates were calculated using 2008 mid-year population estimates. Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Table 3 Pertussis cases and rates by DHB since January 2009, including new cases in the last two weeks

DHB	Cumulative notifications			Last two weeks		
	Cases	Rates ¹	Hosp	Cases	Rates ¹	Hosp
Northland	15	9.7	3	0	0.0	0
Waitemata	104	20.0	8	5	1.0	0
Auckland	59	13.5	10	3	0.7	0
Counties Manukau	64	13.5	13	4	0.8	0
Waikato	190	53.3	9	12	3.4	2
Lakes	32	31.5	5	0	0.0	0
Bay of Plenty	54	26.3	5	5	2.4	0
Tairāwhiti	10	21.8	0	2	4.4	0
Taranaki	35	32.5	1	7	6.5	0
Hawke's Bay	26	17.0	6	1	0.7	0
Whanganui	6	9.5	1	0	0.0	0
MidCentral	20	12.1	0	1	0.6	0
Hutt Valley	47	33.1	1	1	0.7	0
Capital and Coast	81	28.5	4	2	0.7	0
Wairarapa	6	15.1	0	4	10.1	0
Nelson Marlborough	85	62.6	2	3	2.2	0
West Coast	28	86.5	1	0	0.0	0
Canterbury	285	57.5	9	9	1.8	1
South Canterbury	25	45.2	0	0	0.0	0
Otago	18	9.6	1	0	0.0	0
Southland	25	22.6	0	0	0.0	0
Total	1215	28.5	79	59	1.4	3

¹Rate of confirmed and probable pertussis cases per 100,000 population calculated using 2008 mid-year population estimates.

²Cumulative notifications between 3 January and 6 November

Hosp: hospitalisation counts

Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Appendix

Table 4 Case classification for pertussis notification in New Zealand

Confirmed	A clinically compatible illness that is laboratory confirmed by isolation of <i>Bordetella pertussis</i> from a pernasal swab, or epidemiologically linked to a confirmed case.
Probable	Cough lasting longer than two weeks and one or more of the following: <ul style="list-style-type: none"> • Paroxysmal cough • Cough ending in vomiting or apnoea • Inspiratory whoop for which there is no other known cause.
Suspect	In children under five years of age any paroxysmal cough with whoop, vomiting or apnoea for which there is no other known cause.
Other	Status recorded as <i>under investigation</i> or suspect case.
Notifications	Include confirmed cases, probable, and other as specified above.

This report is available on the internet from www.surv.esr.cri.nz