

PERTUSSIS REPORT

January - November 2009 (Weeks 48 - 49)

This report includes cases of pertussis reported in EpiSurv up to midnight 4 December 2009. Data was extracted from EpiSurv at 9.30am 8 December 2009.

There have been a total of 1290 pertussis notifications reported in EpiSurv since 3 January 2009, including 574 confirmed cases, 581 probable cases, 58 suspect cases, and 77 cases under investigation. Eighty five cases were hospitalised. There have been no deaths reported. In the past two weeks, 79 (43 and 36 consecutively) new cases of pertussis were notified, including 49 confirmed cases, seven probable cases, three suspect cases, and 20 cases under investigation. Seven (two and five 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. Since week 44, notifications have fluctuated widely, although the general trend for weeks 45 to 49 is an increase in notifications.. However, the total number of notifications may change as cases are investigated.

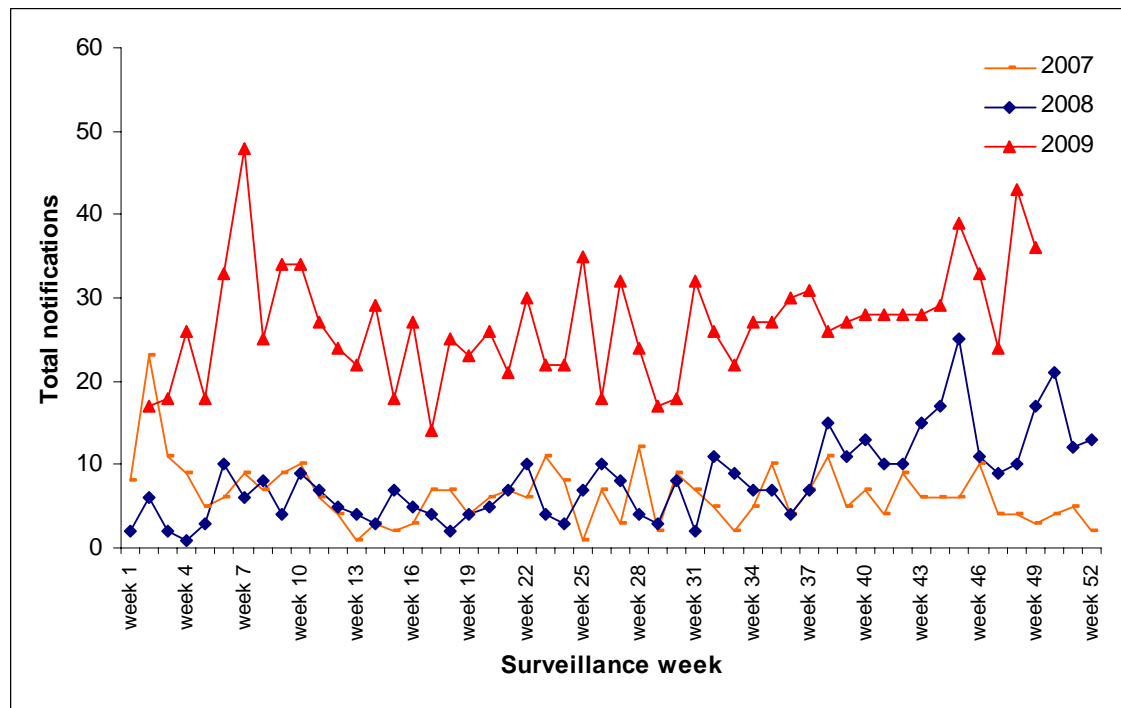


Figure 1: Comparative epidemic curves of total pertussis notifications by week reported during years 2007, 2008, and 2009, since January (surveillance week = Saturday to Friday inclusive).

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 (173.2 per 100 000 population, 111 cases), followed by the 1 to 4 (56.8 per 100 000 population, 134 cases) and 5 to 9 (46.9 per 100 000 population, 135 cases) year age groups. For the last two weeks, children aged less than one year had the highest age-specific rate (15.6 per 100 000 population, 10 cases).

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

Age group (Years)	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
<1	111	173.2	56	10	15.6	5
1 to 4	134	56.8	7	6	2.5	0
5 to 9	135	46.9	3	9	3.1	0
10 to 14	93	30.8	1	7	2.3	0
15 to 19	114	35.3	2	6	1.9	1
20 to 29	105	18.4	3	5	0.9	0
30 to 39	160	27.4	4	11	1.9	1
40 to 49	174	27.4	1	10	1.6	0
50 to 59	133	25.6	3	10	1.9	0
60 to 69	80	21.2	1	3	0.8	0
70+	51	13.7	4	2	0.5	0
Overall	1290	30.2	85	79	1.9	7

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

²Cumulative notifications between 3 January and 4 December

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 1172 cases with a known ethnicity, Europeans had the highest rate (34.8 per 100 000 population, 938 cases), followed by Maori ethnicity (25.6 per 100 000 population, 145 cases). In the last two weeks, Europeans had the highest rate (2.2 per 100 000 population, 58 cases).

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

Ethnicity	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
Maori	145	25.6	21	8	1.4	1
Pacific Peoples	53	23.4	17	3	1.3	2
Other	36	9.6	4	1	0.3	0
European	938	34.8	36	58	2.2	4
Unknown	118	-	7	9	-	0
Overall	1290	32.0	85	79	2.0	7

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

²Cumulative notifications between 3 January and 4 December

Hosp: hospitalisation counts

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

Hospitalisations

There have been 85 hospitalisations reported in EpiSurv since 3 January 2009 including seven in the past two weeks. Fifty six (65.9%) of the 85 hospitalisations were children aged less than one year of age. Of the seven hospitalisations in the past two weeks, cases were distributed by age as follows less than one year (5 cases), 15-19 years (1 case) and 30-39 years (1 case). Ethnicity was reported for all of the seven hospitalised cases in the past two weeks; European (4 cases), Pacific Peoples (2 cases) and Maori (1 case). Counties Manukau and Auckland DHBs had the highest number of cumulative hospitalisations, 16 and 11, 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 (64.8 per 100 000 population, 88 cases) and Waikato (59.5 per 100 000 population, 212 cases) DHBs. Canterbury DHB reported the highest number of notifications (289 cases) followed by Waikato DHB (212 cases). In the past two weeks, the highest number of notifications was reported in Waikato DHB (22 cases), followed by Waitemata DHB (8 cases).

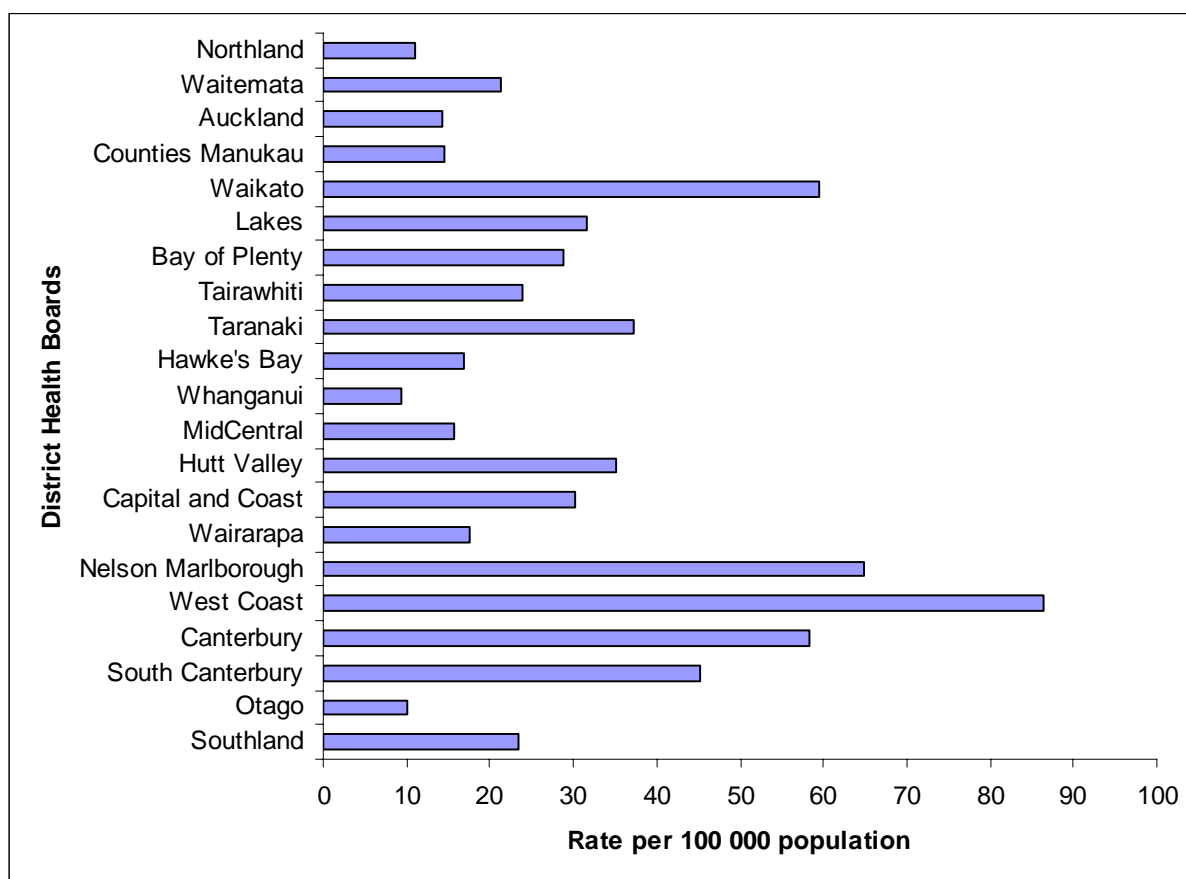


Figure 2: Geographical distribution of pertussis crude rates (cases per 100,000 population) since 3 January 2009.

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	17	11.0	4	2	1.3	1
Waitemata	111	21.3	8	8	1.5	0
Auckland	63	14.4	11	4	0.9	1
Counties Manukau	69	14.6	16	6	1.3	3
Waikato	212	59.5	9	22	6.2	0
Lakes	32	31.5	4	1	1.0	0
Bay of Plenty	59	28.7	5	5	2.4	0
Tairāwhiti	11	24.0	0	1	2.2	0
Taranaki	40	37.1	2	6	5.6	1
Hawke's Bay	26	17.0	6	0	0.0	0
Whanganui	6	9.5	1	0	0.0	0
MidCentral	26	15.8	0	6	3.6	0
Hutt Valley	50	35.2	1	2	1.4	0
Capital and Coast	86	30.2	5	5	1.8	1
Wairarapa	7	17.6	0	1	2.5	0
Nelson	88	64.8	2	4	2.9	0
Marlborough						
West Coast	28	86.5	1	0	0.0	0
Canterbury	289	58.3	9	4	0.8	0
South Canterbury	25	45.2	0	0	0.0	0
Otago	19	10.1	1	1	0.5	0
Southland	26	23.5	0	1	0.9	0
Total	1290	30.2	85	79	1.9	7

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

² Cumulative notifications between 3 January and 4 December

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