

PERTUSSIS REPORT

January - December 2009 (Weeks 50 - 51)

This report includes cases of pertussis reported in EpiSurv up to midnight 18 December 2009. Data was extracted from EpiSurv at 9.00am 22 December 2009.

There have been a total of 1353 pertussis notifications reported in EpiSurv since 3 January 2009, including 609 confirmed cases, 610 probable cases, 62 suspect cases, and 72 cases under investigation. Eighty seven cases were hospitalised. There have been no deaths reported. In the past two weeks, 68 (40 and 28 consecutively) new cases of pertussis were notified, including 23 confirmed cases, 24 probable cases, six suspect cases, and 15 cases under investigation. One hospitalisation in week 51 was 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. However, the total number of notifications may change as cases are investigated.

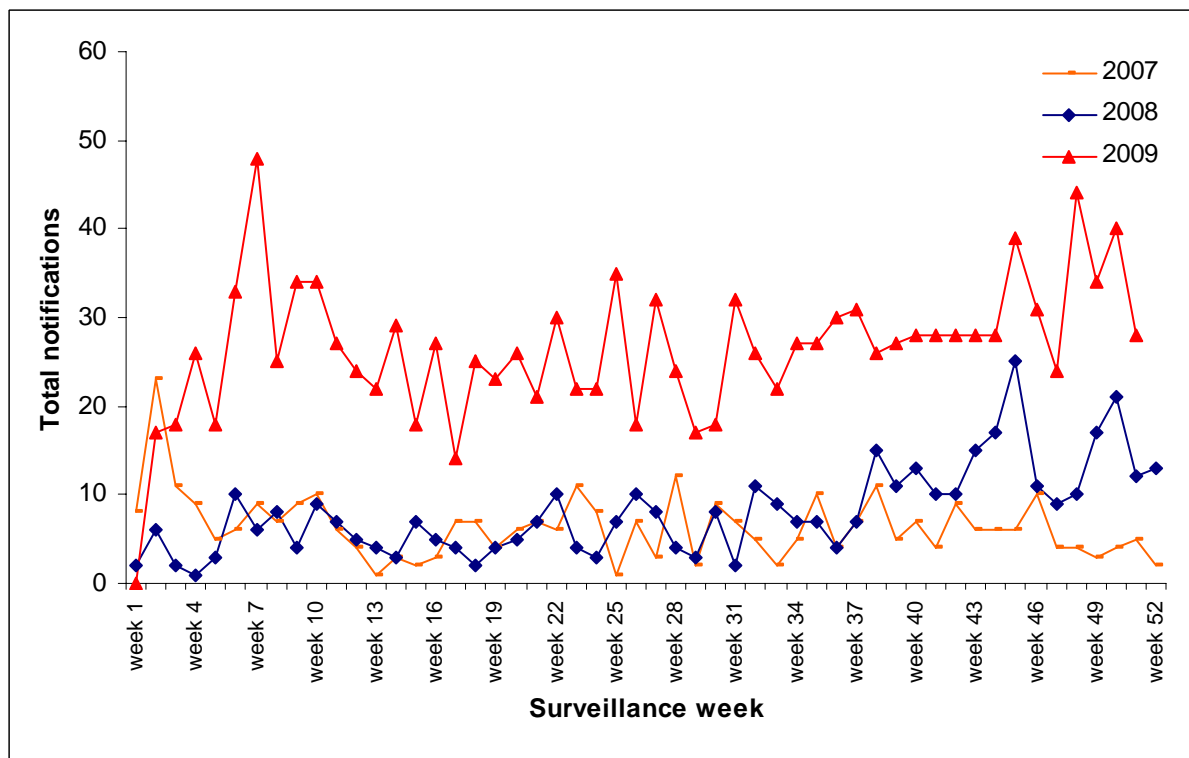


Figure 1: Comparative epidemic curves of total pertussis notifications by week reported during years 2007, 2008, and 2009, since January (surveillance week = Saturday to Friday inclusive).

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 (176.4 per 100 000 population, 113 cases), followed by the 1 to 4 (58.9 per 100 000 population, 139 cases) and 5 to 9 (48.7 per 100 000 population, 140 cases) year age groups. For the last two weeks, children aged less than one year had the highest age-specific rate (6.2 per 100 000 population, 4 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	Cases	Rates ¹	Hosp
<1	113	176.4	58	4	6.2	1
1 to 4	139	58.9	7	5	2.1	0
5 to 9	140	48.7	3	5	1.7	0
10 to 14	96	31.8	1	3	1.0	0
15 to 19	120	37.2	2	6	1.9	0
20 to 29	108	19.0	3	3	0.5	0
30 to 39	172	29.5	4	13	2.2	0
40 to 49	186	29.3	1	11	1.7	0
50 to 59	137	26.3	3	5	1.0	0
60 to 69	90	23.8	1	11	2.9	0
70+	52	14.0	4	2	0.5	0
Overall	1353	31.7	87	68	1.6	1

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

²Cumulative notifications between 3 January and 18 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 1234 cases with a known ethnicity, Europeans had the highest rate (36.6 per 100 000 population, 986 cases), followed by Maori ethnicity (27.4 per 100 000 population, 155 cases). In the last two weeks, Maori had the highest rate (1.9 per 100 000 population, 11 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	Cases	Rates ¹	Hosp
Maori	155	27.4	23	11	1.9	1
Pacific Peoples	53	23.4	17	0	0.0	0
Other	40	10.7	4	1	0.3	0
European	986	36.6	36	47	1.7	0
Unknown	119	-	7	9	-	0
Overall	1353	33.6	87	68	1.7	1

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

²Cumulative notifications between 3 January and 18 December

Hosp: hospitalisation counts

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

Hospitalisations

There have been 87 hospitalisations reported in EpiSurv since 3 January 2009 including one in the last two weeks. Fifty eight (66.7%) of the 87 hospitalisations were children aged less than one year of age. The case hospitalised in the last two weeks was aged less than one year and was of Maori ethnicity. Counties Manukau and Auckland DHBs had the highest number of cumulative hospitalisations, 17 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 (89.6 per 100 000 population, 29 cases), followed by Nelson Marlborough (67.8 per 100 000 population, 92 cases) and Waikato (63.2 per 100 000 population, 225 cases) DHBs. Canterbury DHB reported the highest number of notifications (307 cases) followed by Waikato DHB (225 cases). In the last two weeks, the highest number of notifications was reported in Canterbury DHB (18 cases), followed by Waikato DHB (13 cases).

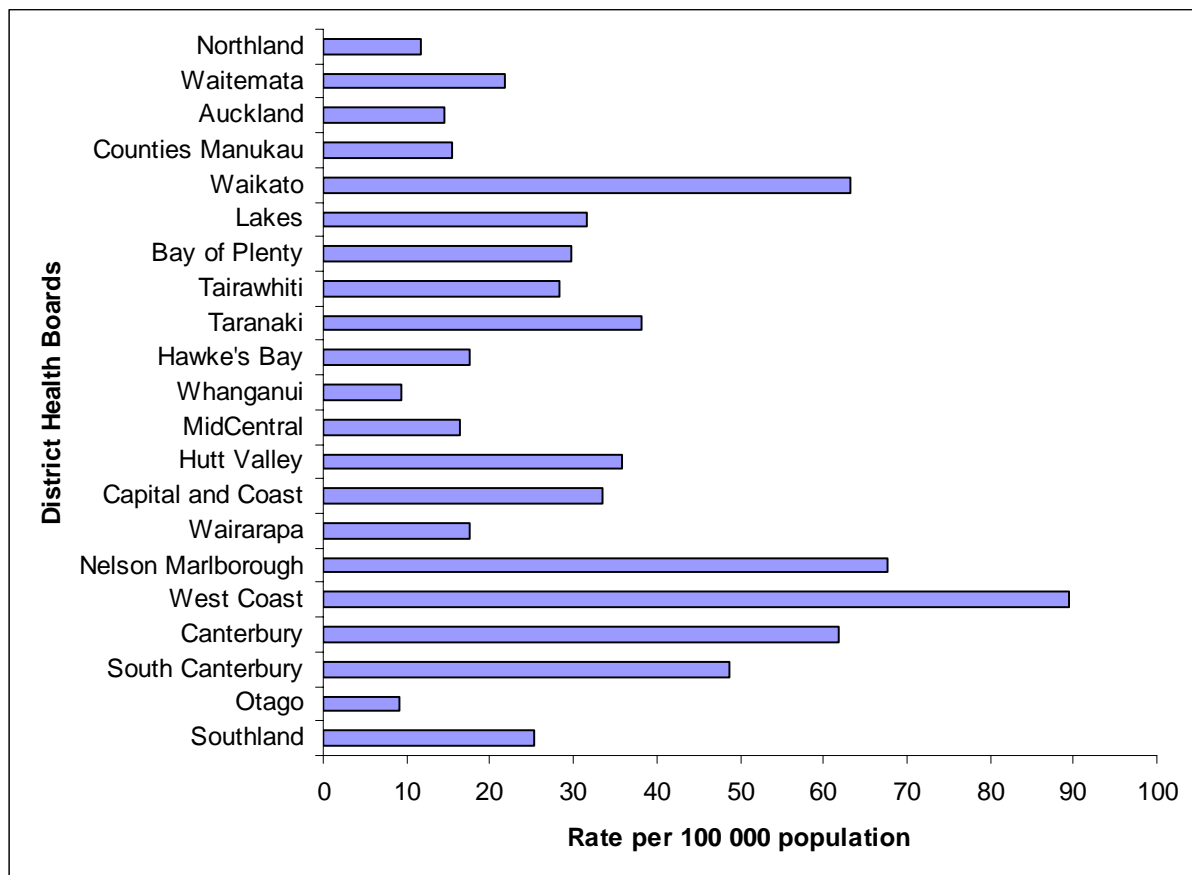


Figure 2: Geographical distribution of pertussis crude rates (cases per 100,000 population) since 3 January 2009.

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	18	11.6	4	1	0.6	0
Waitemata	113	21.7	8	5	1.0	0
Auckland	64	14.6	11	1	0.2	0
Counties Manukau	73	15.4	17	4	0.8	1
Waikato	225	63.2	9	13	3.6	0
Lakes	32	31.5	4	0	0.0	0
Bay of Plenty	61	29.7	5	2	1.0	0
Tairāwhiti	13	28.3	0	2	4.4	0
Taranaki	41	38.1	2	2	1.9	0
Hawke's Bay	27	17.6	6	1	0.7	0
Whanganui	6	9.5	1	0	0.0	0
MidCentral	27	16.4	0	1	0.6	0
Hutt Valley	51	35.9	1	2	1.4	0
Capital and Coast	95	33.4	6	7	2.5	0
Wairarapa	7	17.6	0	0	0.0	0
Nelson Marlborough	92	67.8	2	4	2.9	0
West Coast	29	89.6	1	1	3.1	0
Canterbury	307	61.9	9	18	3.6	0
South Canterbury	27	48.8	0	2	3.6	0
Otago	17	9.1	1	0	0.0	0
Southland	28	25.3	0	2	1.8	0
Total	1353	31.7	87	68	1.6	1

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

²Cumulative notifications between 3 January and 18 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