

PERTUSSIS REPORT

January - October 2009 (Weeks 40 - 41)

This report includes cases of pertussis reported in EpiSurv up to midnight 9 October 2009. Data was extracted from EpiSurv at 10 am 13 October 2009.

There have been a total of 1038 pertussis notifications reported in EpiSurv since 3 January 2009, including 433 confirmed cases, and 502 probable cases. Among the total notifications, there have been 66 cumulative hospitalisations of which 66.7% (44) were aged less than one year old. There have been no deaths reported. In the past two weeks, 59 (29 and 30 consecutively) new cases of pertussis were notified, including four hospitalisations. The 59 notified cases consisted of 26 confirmed cases, 19 probable cases, seven suspect cases and seven cases under investigation.

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 notifications since January in 2007, 2008 and 2009. A substantial increase, with weekly fluctuations, of pertussis notifications is clearly seen this year compared to the previous two years, though this increase started around week 38 in 2008.

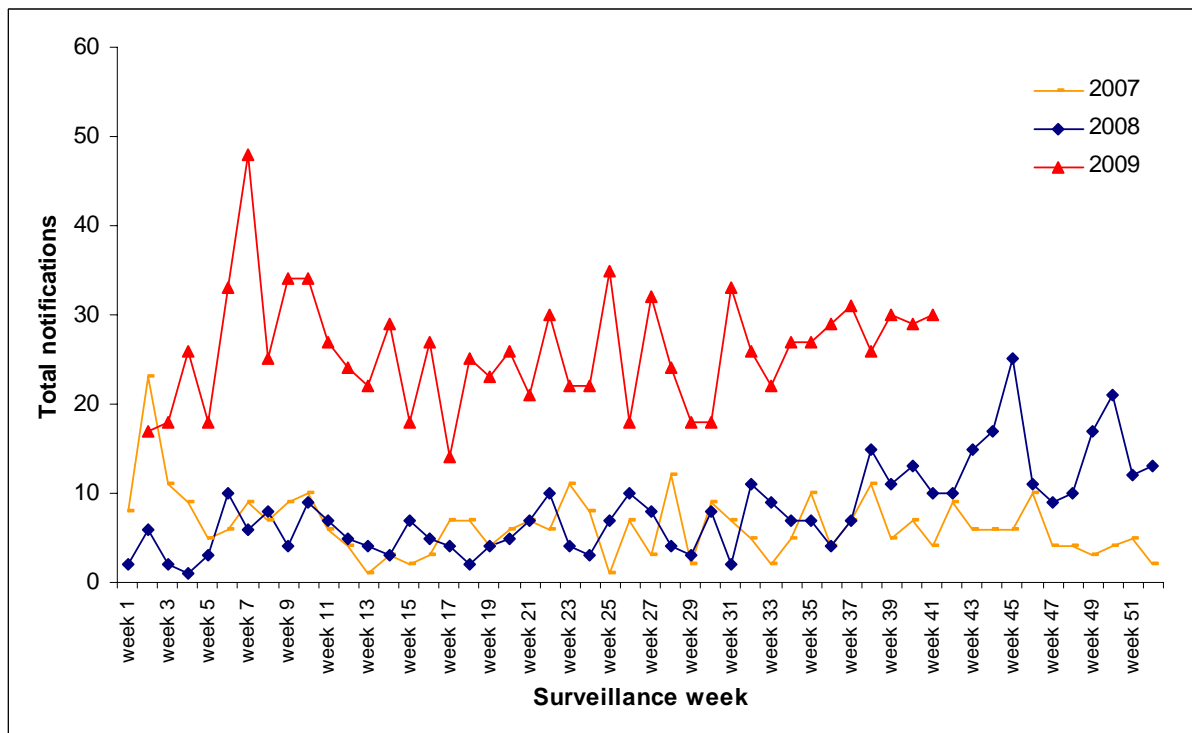


Figure 1 Comparative epidemic curves of total pertussis notifications by week reported during years 2007, 2008, and 2009, since January (surveillance week = Saturday to Friday inclusive).

Age distribution of cases

The age specific rates of pertussis and count of cases since 3 January 2009, and new cases for the past two weeks can be seen in Table 1. Higher pertussis cumulative notifications were seen in age groups covering those aged from 1 to 9 and 30 to 59 years. However, the cumulative rate was substantially higher in under one-year-olds with 134.2 (n = 86) cases per 100,000 population, 7.8 (n = 5) in the past two weeks.

Table 1 Distribution of pertussis cases and rates (cases per 100,000 population) by age group, since January 2009 and for the past two weeks

Age group (Years)	Cumulative notifications			Last two weeks		
	Cases	Rate ¹	Hosp	Cases	Rate ¹	Hosp
<1	86	134.2	44	5	7.8	3
1 to 4	114	48.3	5	7	3.0	1
5 to 9	111	38.6	2	5	1.7	0
10 to 14	76	25.2	1	4	1.3	0
15 to 19	93	28.8	1	4	1.2	0
20 to 29	85	14.9	3	3	0.5	0
30 to 39	126	21.6	2	7	1.2	0
40 to 49	138	21.8	0	6	0.9	0
50 to 59	105	20.2	3	4	0.8	0
60 to 69	64	16.9	1	6	1.6	0
70+	40	10.8	4	8	2.2	0
Overall	1038	24.3	66	59	1.4	4

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

Hosp: hospitalisations

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

Ethnicity distribution of cases

Table 2 depicts rates and cases of pertussis by ethnicity since 3 January 2009 and in the past two weeks. Among cases with a known ethnicity, Europeans had the highest cumulative rate and number of pertussis cases with 28.2 (n = 759) cases per 100,000 population. In the past two weeks, cases were higher among Europeans but Maori had the highest rate, 2.3 (n = 13) cases per 100,000 population. Of the 49 cases with known ethnicity in the past two weeks, 69% (n = 34) were Europeans, 27% (n = 13) were Maori, 2% (n = 1) each were Pacific Peoples and Other.

Table 2 Distribution of pertussis cases and rates (cases per 100,000 population) by ethnicity (prioritised), since January 2009 and for the past two week

Ethnicity	Cumulative			Last two weeks		
	Cases	Rate ¹	Hosp	Cases	Rate ¹	Hosp
Maori	111	19.6	17	13	2.3	2
Pacific Peoples	40	17.7	12	1	0.4	1
Other	30	8.0	4	1	0.3	0
European	759	28.2	25	34	1.3	1
Unknown	98	58.4	8	10	6.0	0
Overall	1038	25.8	66	59	1.5	4

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

Hosp: hospitalisations

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

Hospitalisations

There have been 66 hospitalisations reported in EpiSurv since January 2009 including four in the past two weeks. Most of the 66 hospitalisations, 66.7% (n = 44 cases), were aged less than one year. 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 the actual case counts are given in Table 3. Canterbury and Waikato DHBs reported the highest number of notifications, 253 and 152, respectively. Almost a quarter (24%, n =14) of all the 59 new cases in the past two weeks were from Waikato. The highest rates per 100,000 population were seen in West Coast, 80.3 (n = 26), Nelson Marlborough, 59.0 (n = 80), Canterbury, 51.0 (n = 253), South Canterbury, 43.4 (n = 24), and Waikato 42.7 (n = 152) DHBs.

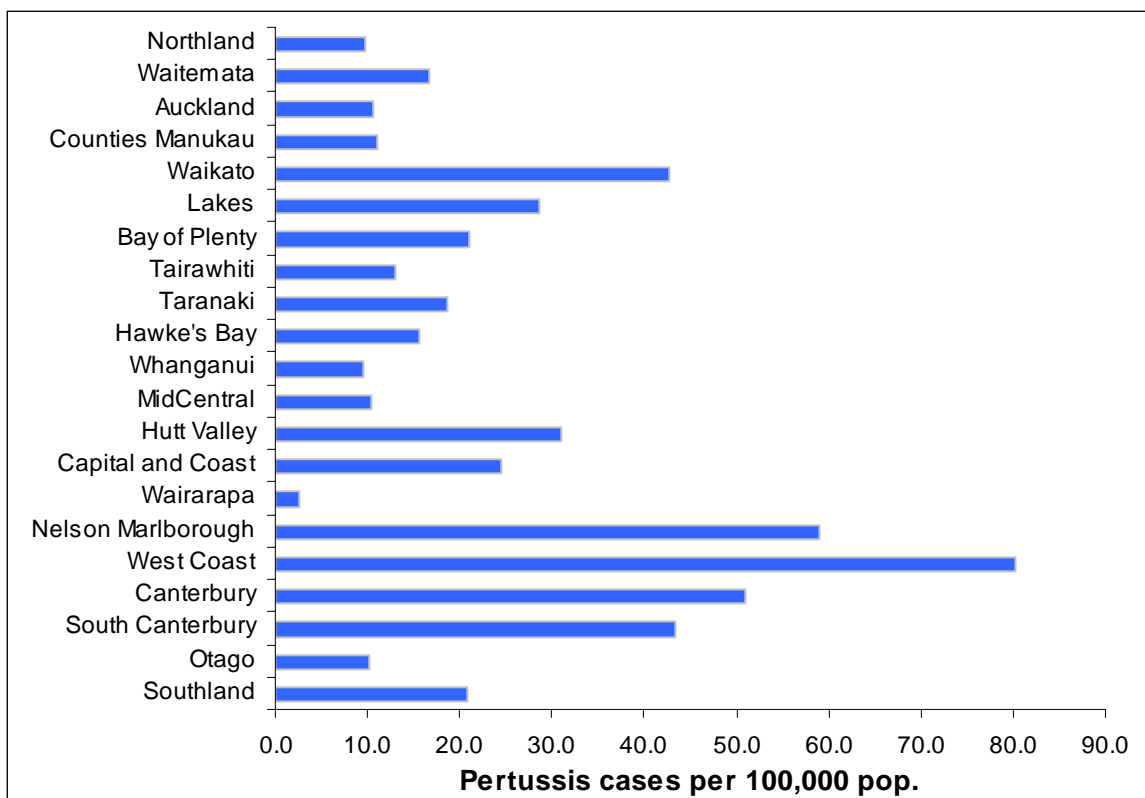


Figure 2 Geographical distribution of pertussis crude rates (cases per 100,000 population) since January 2009. Rates were calculated using 2008 mid-year population estimates. Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

Table 3 Distribution of pertussis cases and population rates by DHB since January 2009, and last two weeks new cases

DHB	Cumulative notifications			Last two weeks	
	Cases	Rate ¹	Hosp	Cases	Hosp
Northland	15	9.7	2	2	0
Waitemata	87	16.7	6	10	1
Auckland	47	10.7	8	3	0
Counties Manukau	52	11.0	10	0	0
Waikato	152	42.7	7	14	2
Lakes	29	28.6	5	5	1
Bay of Plenty	43	20.9	5	2	0
Tairāwhiti	6	13.1	0	0	0
Taranaki	20	18.6	1	0	0
Hawke's Bay	24	15.7	6	0	0
Whanganui	6	9.5	1	0	0
MidCentral	17	10.3	0	0	0
Hutt Valley	44	31.0	1	3	0
Capital and Coast	70	24.6	3	5	0
Wairarapa	1	2.5	0	0	0
Nelson Marlborough	80	59.0	2	3	0
West Coast	26	80.3	1	0	0
Canterbury	253	51.0	7	10	0
South Canterbury	24	43.4	0	0	0
Otago	19	10.1	1	1	0
Southland	23	20.8	0	1	0
Total	1038	24.3	66	59	4

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

Hosp: hospitalisations

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, vomit 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.