

PERTUSSIS REPORT

January - November 2009 (Weeks 44 - 45)

This report includes cases of pertussis reported in EpiSurv up to midnight 6 November 2009. Data was extracted from EpiSurv at 10 am 10 November 2009.

There have been a total of 1157 pertussis notifications reported in EpiSurv since 3 January 2009, including 495 confirmed cases, 554 probable cases, 53 suspect cases, and 55 cases under investigation. Among the total notifications, there have been 76 cumulative hospitalisations of which 67.1% (51) were children aged less than one year. There have been no deaths reported. In the past two weeks, 68 (29 and 39 consecutively) new cases of pertussis were notified, including 36 confirmed cases, 21 probable cases, four suspect cases, and seven cases under investigation. Six (four 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 notifications for 2007, 2008 and 2009 (to date). A substantial increase, with weekly fluctuations, of pertussis notifications is clearly seen this year compared to the previous two years. This increase started around week 38 in 2008. While weekly case counts have been relatively stable since week 34, there has been an increase in notifications in the most recent surveillance week (week 45). However, the total number of notifications may change as cases are investigated.

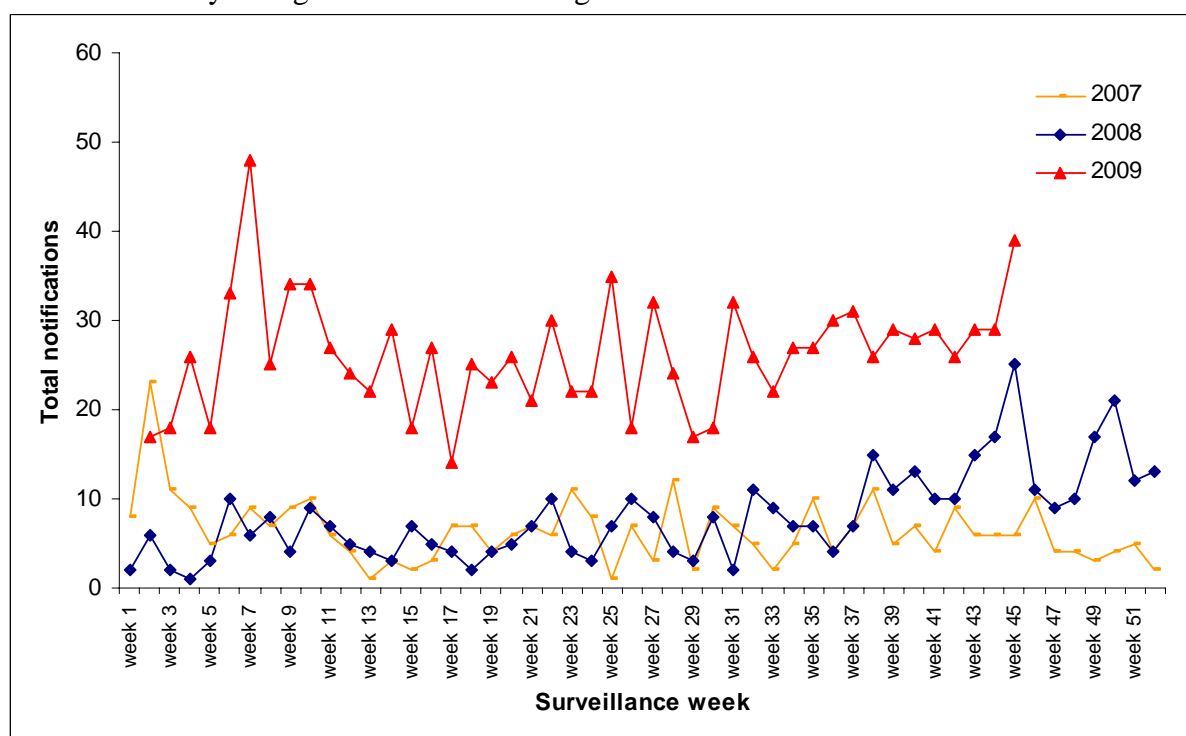


Figure 1 Comparative epidemic curves of total pertussis notifications by week reported during years 2007, 2008, and 2009, since January (surveillance week = Saturday to Friday inclusive).

Age distribution of cases

The age specific cumulative rates of pertussis and numbers of cases between 3 January and 6 November 2009, including new cases for the past two weeks, can be seen in Table 1. The cumulative rate was substantially higher in under one-year-olds with 153.0 (n = 98) cases per 100,000 population. High cumulative notifications were also seen in the 1 to 9, 15 to 19, and 30 to 59 year age groups. For the past two weeks, although higher number of cases are seen among the age groups 20 to 29 years (n = 10) and 40 to 49 years (n = 12), children under one year old had the highest rate with 10.9 cases per 100,000.

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	98	153.0	51	7	10.9	3
1 to 4	123	52.1	7	4	1.7	2
5 to 9	118	41.0	2	5	1.7	0
10 to 14	83	27.5	1	4	1.3	0
15 to 19	103	31.9	1	4	1.2	0
20 to 29	97	17.0	3	10	1.8	0
30 to 39	140	24.0	3	8	1.4	1
40 to 49	158	24.9	0	12	1.9	0
50 to 59	117	22.5	3	5	1.0	0
60 to 69	72	19.1	1	6	1.6	0
70+	48	12.9	4	3	0.8	0
Overall	1157	27.1	76	68	1.6	6

¹Age specific rate 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.

Ethnicity

Table 2 depicts count of cases and rates of pertussis by ethnicity between 3 January and 6 November 2009, including new cases for the past two weeks. Among cases with a known ethnicity, Europeans had the highest cumulative rate and number of pertussis cases with 31.3 (n = 842) cases per 100,000 population. In the past two weeks, both the rate and case count were highest among Europeans 1.7 (n = 47) cases per 100,000 population.

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

Ethnicity	Cumulative ² notifications			Last two weeks		
	Cases	Rates ¹	Hosp	New cases	Rates ¹	Hosp
Maori	123	21.8	19	7	1.2	0
Pacific Peoples	47	20.8	15	3	1.3	2
Other	34	9.1	4	2	0.5	0
European	842	31.3	30	47	1.7	4
Unknown	111	-	8	9	-	0
Overall	1157	28.7	76	68	1.7	6

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

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.

Hospitalisations

There have been 76 hospitalisations reported in EpiSurv since January 2009 including six in the past two weeks. Of the 6 hospitalisations in the past two weeks, five were aged less than five years, and one was in the 30 to 39 years age group. Ethnicity was reported for all the six hospitalised cases in the past two weeks, two were of Pacific Peoples ethnicity and four were European. 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 which shows the actual case counts. Higher rates per 100,000 population were seen in West Coast, 86.5 (n = 28), Nelson Marlborough, 60.4 (n = 82), Canterbury, 55.6 (n = 276), Waikato 50.0 (n = 178), and South Canterbury, 45.2 (n = 25) DHBs. Canterbury and Waikato DHBs reported the highest number of notifications, respectively. The number of cases in the past two weeks were higher in Waikato (n = 16), Waitemata (n = 12), and Canterbury (n = 12) DHBs.

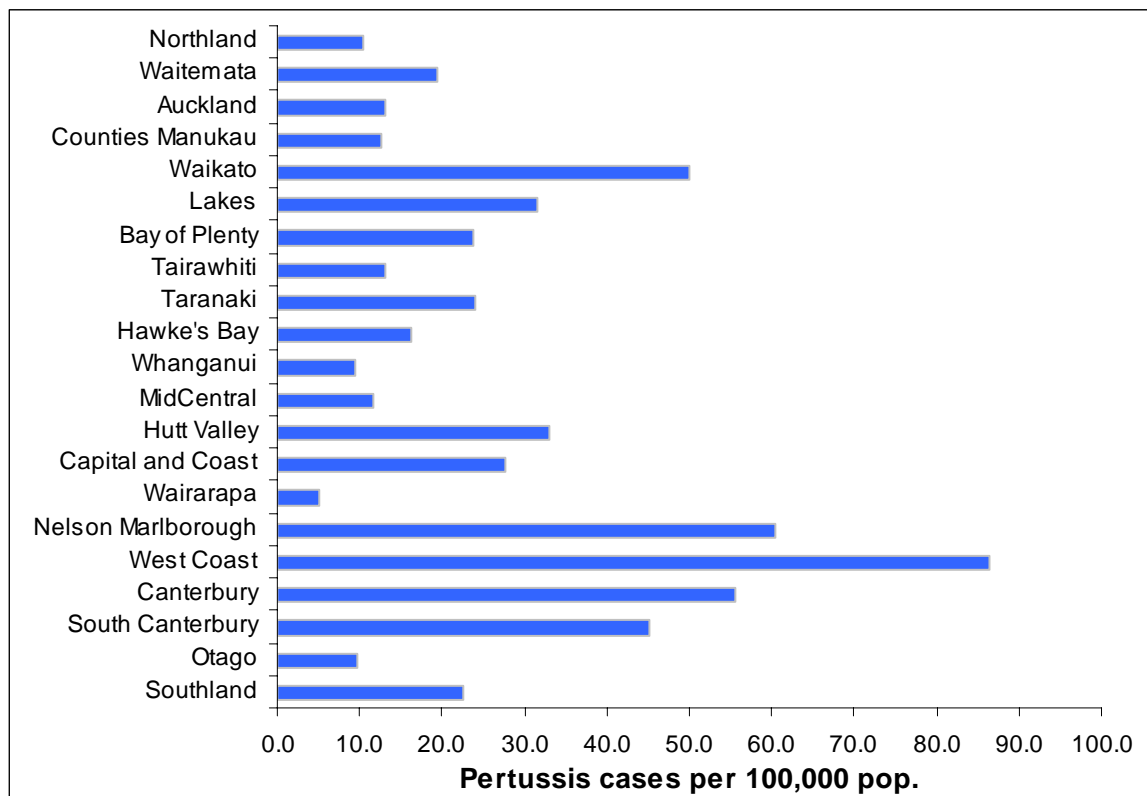


Figure 2 Geographical distribution of pertussis crude rates (cases per 100,000 population) since 3 January 2009. Rates were calculated using 2008 mid-year population estimates. Rates calculated on fewer than five cases are unstable and should be interpreted with caution.

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	Hosp
Northland	16	10.3	3	0	0
Waitemata	101	19.4	8	12	1
Auckland	57	13.0	10	3	1
Counties Manukau	60	12.7	13	3	2
Waikato	178	50.0	7	16	0
Lakes	32	31.5	5	0	0
Bay of Plenty	49	23.9	5	4	0
Tairāwhiti	6	13.1	0	0	0
Taranaki	26	24.1	1	2	0
Hawke's Bay	25	16.3	6	1	0
Whanganui	6	9.5	1	0	0
MidCentral	19	11.5	0	1	0
Hutt Valley	47	33.1	1	4	0
Capital and Coast	79	27.8	4	8	1
Wairarapa	2	5.0	0	0	0
Nelson Marlborough	82	60.4	2	1	0
West Coast	28	86.5	1	1	0
Canterbury	276	55.6	8	12	1
South Canterbury	25	45.2	0	0	0
Otago	18	9.6	1	0	0
Southland	25	22.6	0	0	0
Total	1157	27.1	76	68	6

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