Science for Communities

PERTUSSIS REPORT 2 December –29 December 2017

Data contained within this fortnightly report is based on information recorded on EpiSurv by public health service staff as at 9 January 2018. Changes made to EpiSurv data after this date will not be reflected in this report. The results presented may be further updated and should be regarded as provisional. Cases still under investigation are not included in this report.

- A national pertussis outbreak is ongoing
- A non-significant increase in pertussis notifications for the current four weeks (weeks 49–52) compared with the previous four weeks (weeks 45–48) in 2017.
- A significant increase in pertussis notifications for the current four weeks (weeks 49–52, 2017) compared with the same four surveillance weeks in 2016.

Summary

- In the past four surveillance weeks (weeks 49–52, 2 December –29 December 2017), 407 cases of pertussis were notified (111, 107, 122 and 67 cases, consecutively – Figure 1).[1] This included 239 confirmed, 153 probable, and 15 suspect cases. This is significantly higher than the 116 cases reported in the same four surveillance weeks in 2016 (Table 2). In the past four surveillance weeks in 2017, 27 (6.6%) cases were aged less than 1 year and 15 of these cases were hospitalised. Of all 407 cases, 29 cases were hospitalised and no deaths were reported.

- From 1 January–29 December 2017, there were a total of 2075 confirmed, probable and suspect cases of pertussis notified (44.2 cases per 100,000). Of the 2075 cases, 125 cases (6.0%) were aged less than 1 year, of which 65 (52.0%) were hospitalised (Table 1). Of all 2075 cases, 149 cases (7.2%) were hospitalised.

- From 1 January–29 December 2017, the highest reported pertussis rates were among the less than 1 year and 5–9 years age groups (211.0 and 88.7 per 100,000, respectively). The ethnic groups with the highest notification rates were European or Other (48.3 per 100,000) followed by MELAA (47.8 per 100,000, 25 cases) (Figure 4). The highest single number of cases was reported in the European or Other ethnic group (1504 cases).

- From 1 January–29 December 2017, the highest numbers of pertussis cases were reported by Canterbury (240 cases), Southern (235 cases), and Nelson Marlborough (223 cases) DHBs (Table 3). The DHB with the highest rate was Nelson Marlborough DHB (152.3 per 100,000), followed by Southern (73.7 per 100,000), and Hawke's Bay (62.6 per 100,000, 101 cases) DHBs.

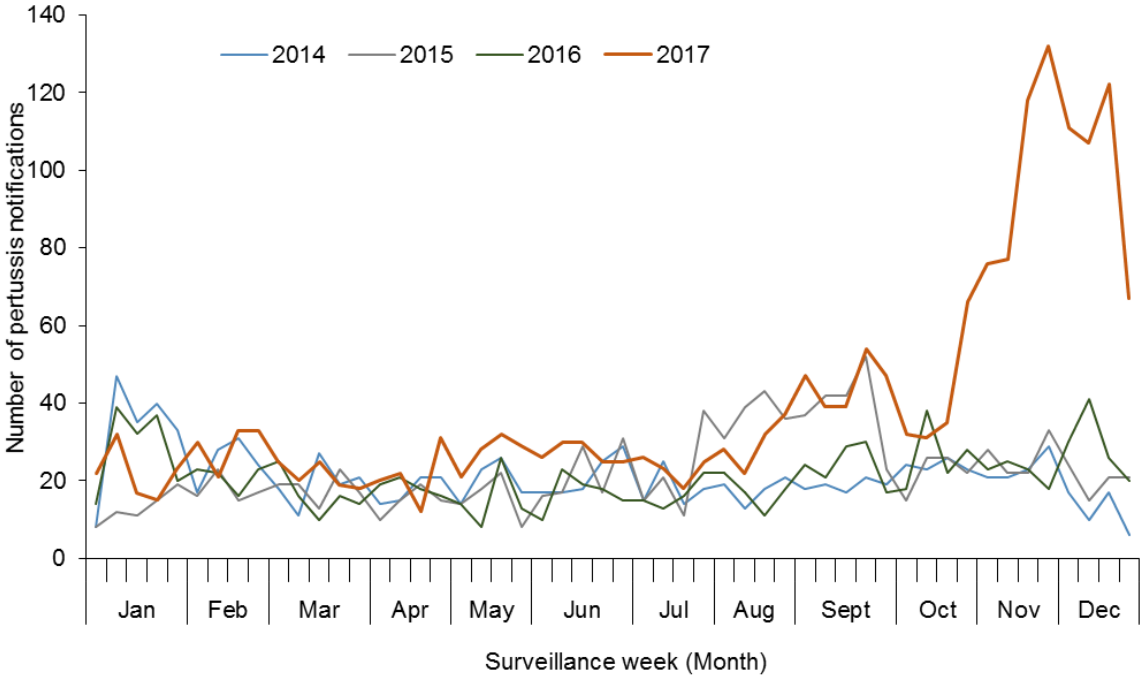
- This report summarises pertussis notifications for the period from 1 January–29 December 2017 (a cumulative summary). It includes the distribution of cases by time, age, prioritised ethnicity and DHB. A summary of the cases from the current four week period (2 December –29 December 2017) is also provided.

[1] Cases still under investigation are not included in this report. Because cases under investigation have still to be classified (as confirmed, probable, suspect or not a case), the total case counts for surveillance weeks may change in future reports.

Trends in pertussis notifications

Total pertussis notifications by week for 2014–2017 (to week ending 29 December 2017) are shown in Figure 1 below.

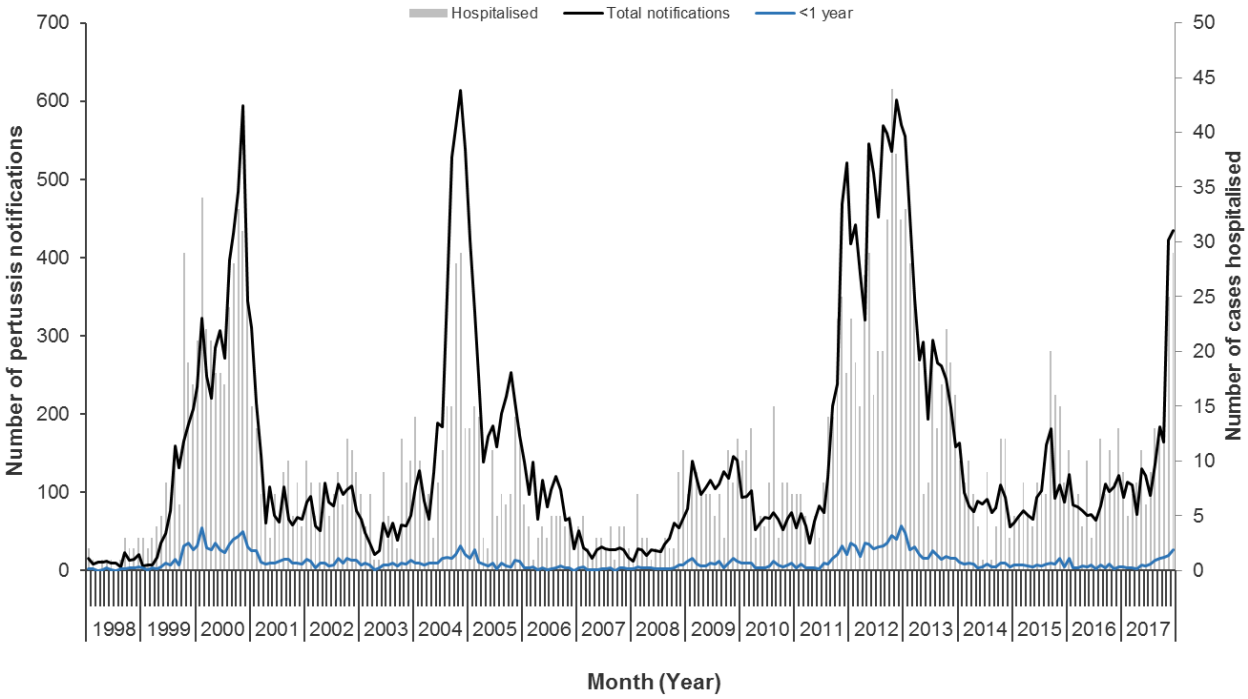
Figure 1: Number of pertussis notifications by week reported, 2014–2017



Note: Includes confirmed, probable, and suspect cases only. Cases still under investigation are excluded.

Figure 2 shows pertussis notifications and hospitalisations by calendar month, and notifications in those aged less than 1 year between January 1998 and December 2017. A four-to- five-year cycle can be seen with large peaks in notifications in years 2000, 2004, 2011/12 and at the end of 2017.

Figure 2: Number of pertussis notifications and hospitalisations by month and year, 1998–2017



Note: Includes confirmed, probable, and suspect cases only. Cases still under investigation are excluded.

Age

The number of pertussis notifications, rates and hospitalisations by age group are shown below in Table 1 (cumulative total for 2017). Table 2 shows the number of notifications and hospitalisations during the current four surveillance weeks in 2017 compared with the same four surveillance weeks in 2016.

Table 1: Number of (confirmed, probable and suspect) pertussis notifications, rates (cases per 100,000 population) and hospitalisations by age group, 1 January–29 December 2017

	Total for 2017[1]		Hospitalised[1]	
Age group (years)	Number of cases	Rate[2]	Number of cases	Percent (%)
<1	125	211.0	65	52.0
1–4	215	87.7	14	6.5
5–9	286	88.7	4	1.4
10–14	259	88.0	2	0.8
15–19	195	61.2	3	1.5
20+	995	28.8	61	6.1
All ages	2075	44.2	149	7.2

[1] Cumulative total 1 January–29 December 2017
[2] Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Where fewer than five cases have been notified a rate has not been calculated.

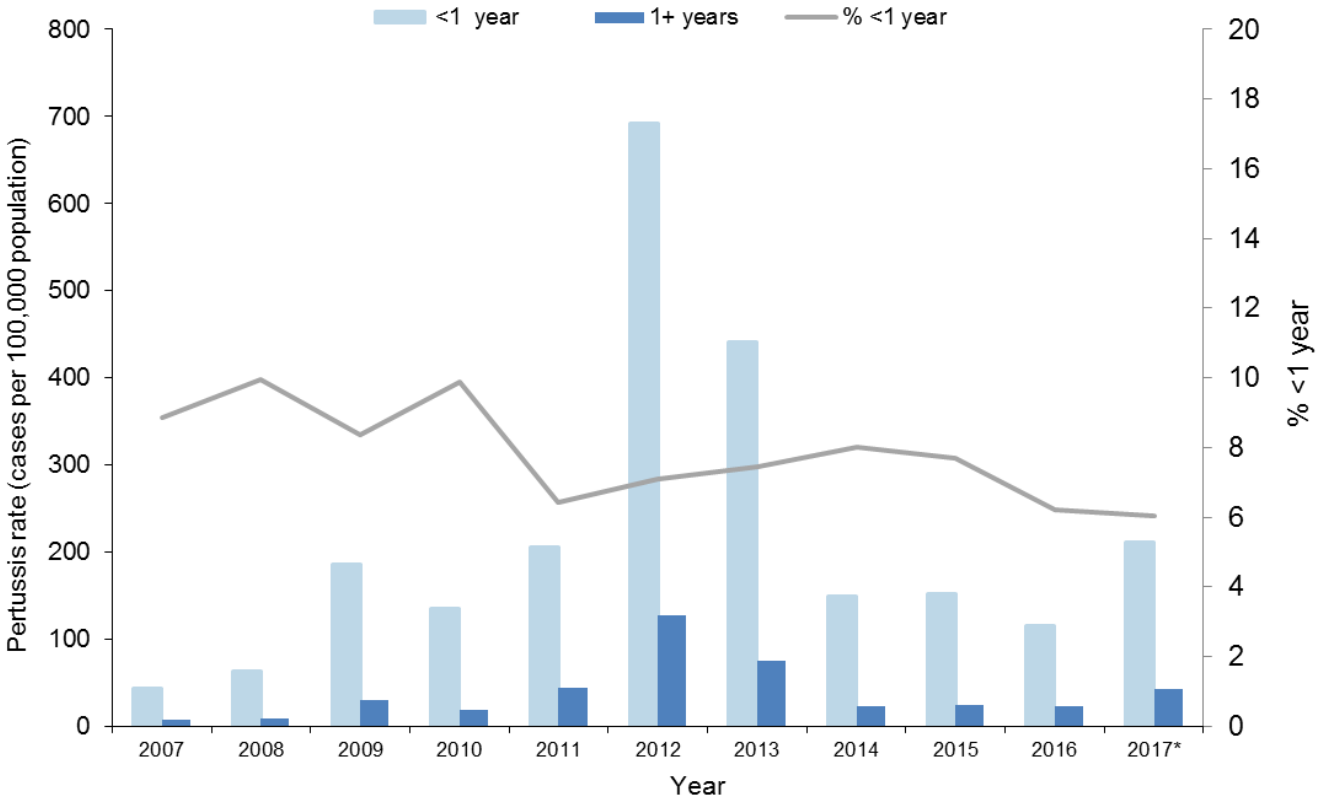
Table 2: Number of (confirmed, probable and suspect) pertussis notifications and hospitalisations in surveillance weeks 49–52 in 2017, compared with the same period in 2016

	Recent four surveillance weeks in 2017 (weeks 49–52)[1]		Same four surveillance weeks in 2016 (weeks 49–52)[2]	
Age group (years)	Number of cases	Cases hospitalised	Number of cases	Cases hospitalised
<1	27	15	5	2
1–4	42	3	9	1
5–9	54	0	17	1
10–14	64	1	21	0
15–19	31	0	7	1
20+	189	10	57	7
All ages	407	29	116	12

[1] 2 December–29 December 2017
[2] 3 December–30 December 2016

Pertussis rates by age group (<1 year and 1+ years) are shown in Figure 3.

Figure 3: Pertussis rate (cases per 100,000 population) by age group (<1 year vs. 1+ years), and % < 1 year olds, 2007–2017

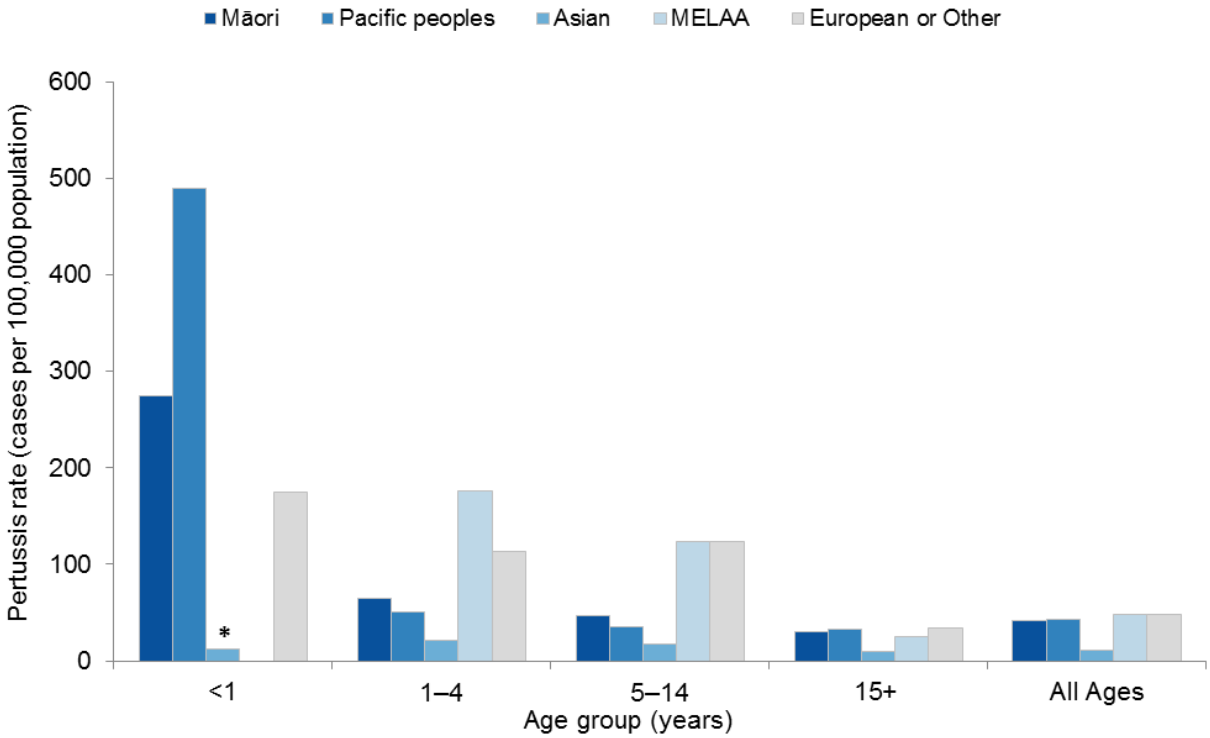


Note: Includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using mid-year population estimates.

Ethnicity

Pertussis rates by age group and ethnicity are shown in Figure 4.

Figure 4: Pertussis rate (cases per 100,000 population) by age group and ethnicity, 1 January–29 December 2017



Note: Notifications 1 January–29 December 2017, includes confirmed, probable and suspect cases only. Ethnicity is prioritised. Denominator data used to determine disease rates for ethnic groups are based on the proportion of people in each ethnic group from the estimated resident 2013 Census population applied to the 2016 mid-year population estimates from Statistics New Zealand.
MELAA: Middle Eastern/Latin American/African.
* Rate based on fewer than five cases

District health board

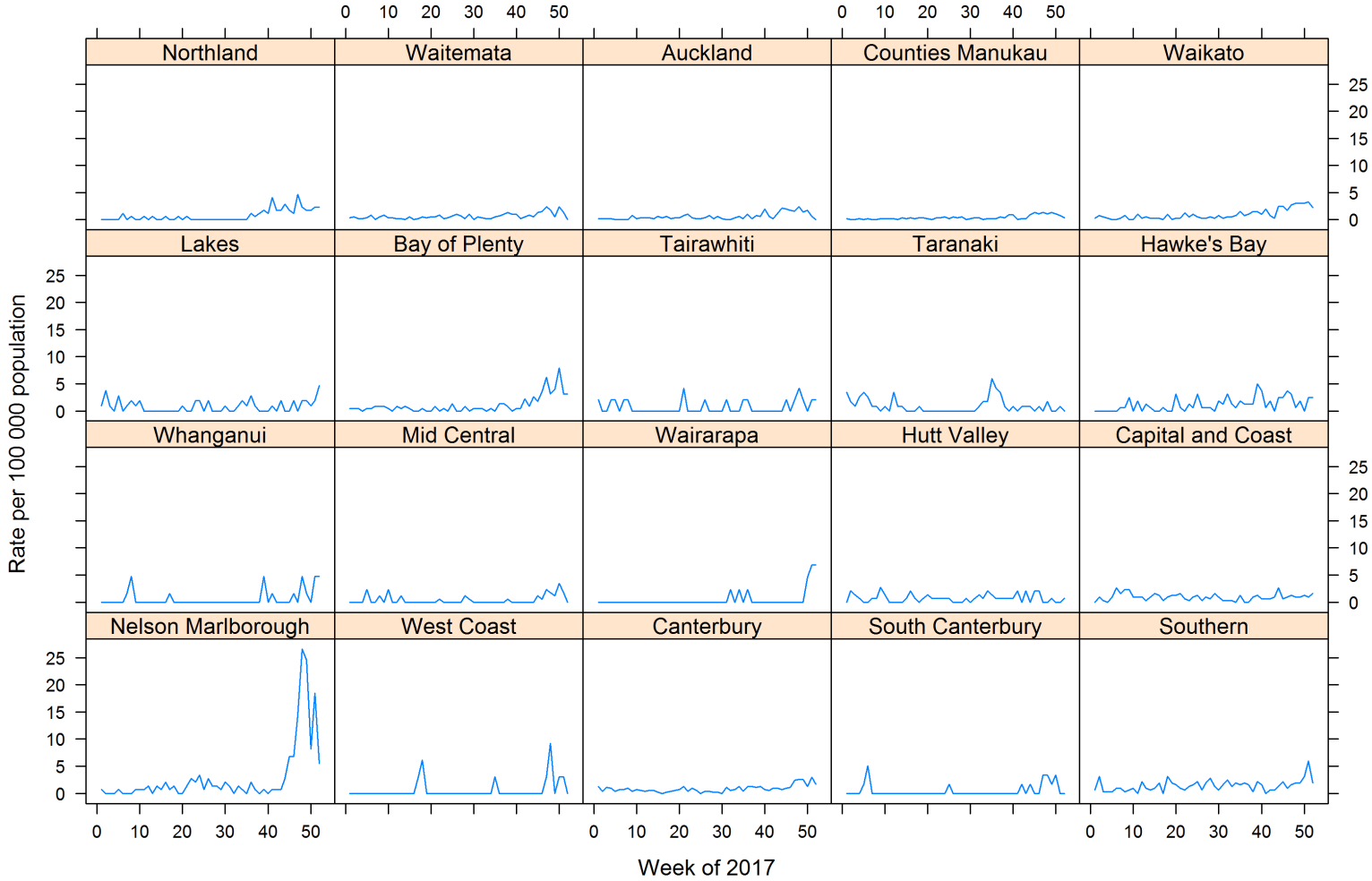
The numbers and rates of pertussis notifications by DHB are shown in Table 3 below.

Table 3: Number of (confirmed, probable and suspect) pertussis notifications, rate (cases per 100,000 population) and hospitalisations by district health board, 2017

District health board	Total for 2017[1]			<1 year old[1]		2 December –29 December 2017		
	Cases	Rate[2]	Hosp[3]	Cases[4]	%[5]	Cases	Hosp[3]	<1 year old[4]
Northland	67	39.1	2	5	7.5	14	1	1
Waitemata	191	32.3	25	17	8.9	25	6	2
Auckland	161	31.7	13	7	4.3	19	1	0
Counties Manukau	109	20.4	30	14	12.8	19	4	4
Waikato	193	48.3	13	14	7.3	46	3	4
Lakes	48	45.0	2	3	6.3	10	0	0
Bay of Plenty	128	56.5	12	9	7.0	41	3	1
Tairawhiti	18	37.7	5	5	27.8	3	2	2
Taranaki	57	48.8	0	0	0.0	1	0	0
Hawke's Bay	101	62.6	7	6	5.9	11	3	2
Whanganui	20	31.7	3	4	20.0	7	0	1
MidCentral	38	21.8	2	2	5.3	11	1	1
Hutt Valley	56	38.4	2	1	1.8	2	0	0
Capital & Coast	155	50.6	3	7	4.5	15	1	1
Wairarapa	11	25.2	0	0	0.0	8	0	0
Nelson Marlborough	223	152.3	3	11	4.9	83	1	6
West Coast	10	30.8	0	0	0.0	2	0	0
Canterbury	240	44.5	7	6	2.5	46	1	0
South Canterbury	14	23.6	0	0	0.0	3	0	0
Southern	235	73.7	20	14	6.0	41	2	2
Overall	2075	44.2	149	125	6.0	407	29	27

[1] Cumulative notifications 1 January–29 December 2017.
[2] Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.
[3] Number of notifications that were hospitalised.
[4] Number of notifications in the <1 year age group.
[5] Percentage of notifications that were <1 year age group

Figure 4: Pertussis rates per 100,000 population by DHB, surveillance weeks 1-52 of 2017



Note: Notifications 1 January–29 December 2017, includes confirmed, probable and suspect cases only. Rate of pertussis cases per 100,000 population calculated using 2016 mid-year population estimates. Rates have not been calculated where fewer than five cases were notified.

This report is available at: http://www.surv.esr.cri.nz/surveillance/PertussisRpt.php