



Pertussis

Summary

Number of cases, 2014: 73

Number of cases, 2013: 173

Crude incidence rate, 2014: 1.6/100,000

Following an increase in pertussis in 2012 with 458 notifications (10.0/100,000), pertussis declined in 2013 with 173 cases (3.8/100,000) notified and declined further in 2014 with 73 cases (1.6/100,000) notified (figures 1 and 2).

Of the 73 cases in 2014, 86% (n=63) were classified as confirmed, four per cent (n=3) were classified as probable and 10% (n=7) were classified as possible.

The largest number of cases was notified in the HSE E while the highest crude incidence rate was in the HSE W followed by the HSE MW (table 1).

Fifty-eight per cent of cases (n=42) were female, 41% (n=30) were male (male:female ratio 1.4:1.0) while gender was not reported for one case.

The largest number of cases (51%, n=37/73) and the highest age-specific incidence rate (51/100,000) were in children aged less than one year with 47% (n=34/73) of all cases aged less than six months of age (figures 3 and 4).

Maternal antibodies from women immunised before pregnancy wane quickly and the concentration of pertussis antibodies is unlikely to be high enough to provide passive protection to their infants prior to primary vaccination. Since August 2012, the National Immunisation Advisory Committee (NIAC) has recommended that pregnant women should be offered tetanus and low dose diphtheria and acellular pertussis (Tdap) vaccine during 27 -36 weeks gestation in each pregnancy, to protect themselves and their infant. Tdap can be given at any time in pregnancy before 27 or after 36 weeks gestation although it may be less effective in providing passive protection to the infant. Data on maternal antenatal vaccination status was provided for 54% (n=20/37) of children aged less than one year and none of the mothers of these infant pertussis cases reported vaccination during the antenatal period. Gestational age at birth was reported for seven cases and ranged from 28 to 41 weeks with a median of 40 weeks and an average of 38 weeks. All seven cases were aged ≤ 6 months at the time of notification. Data on maternal antenatal vaccination status was provided for four of these cases and none of the mothers of these infant pertussis cases reported vaccination during the antenatal period.

In Ireland, it is recommended that children be vaccinated with an acellular pertussis containing vaccine at two, four and six months of age and a booster dose at four to five years of age. In 2008, NIAC recommended a booster with low dose acellular pertussis vaccine for children aged 11-14 years. The adolescent pertussis booster was introduced into the school programme, in 19 LHOs, in 2011 and to all schools in 2012. In August 2012, an additional pertussis booster was recommended for health care workers and pregnant women; please see the HSE National Immunisation Office

website at <http://www.hse.ie/eng/health/immunisation/> for additional information on pertussis vaccination recommendations.

In 2014, the number of doses of pertussis vaccine the cases received was reported for 71% (n=52/73) of cases. Forty four per cent of cases (n=32/73) were unvaccinated; these cases ranged in age from one month to 54 years, with 72% (n=23/32) of these cases aged less than six months. Forty-one per cent of the unvaccinated cases (n=13/32) were less than two months of age and were therefore not eligible for pertussis vaccine in the Irish schedule.

Twelve per cent (n=9/73) of cases were reported to have one dose of pertussis vaccine, all were less than five months of age. Ten per cent (n=7/73) had three doses of pertussis vaccine, these cases ranged in age from one to 12 years. Five per cent (n=4/73) had four doses of pertussis vaccine (one had no vaccination details available), these cases ranged in age from eight to 13 years with one case classified as confirmed. Vaccination status was unknown or not reported for the remainder of cases.

Country of birth was reported as Ireland for 24 cases, Brazil for one, Spain for one, United States for one and was unknown/not specified for the remainder.

Some reported symptoms included cough (98%, n=57/58), paroxysmal cough (87%, n=48/55), inspiratory whoop (59%, n=30/51), apnoea (34%, n=18/53), post-tussive vomiting (34%, n=17/50), cyanosis (29%, n=14/48), choking episodes in infant (46%, n=11/24) and tachypnoea (n=1). Reported complications included pneumonia (4%, n=2/50), conjunctival haemorrhages (2%, n=1/48), seizures (2%, n=1/50) and respiratory tract infection (n=1).

Thirty-six cases were hospitalised, representing 49% (n=36/73) of all cases and 58% (n=36/62) of cases where hospitalisation data was known. Eighty-nine per cent (n=32/36) of those hospitalised were aged less than one year and 36% (n=13/36) were less than two months of age.

Of the 73 cases, the likely setting of exposure to pertussis included home (21%, n=15), crèche/childcare (4%, n=3), healthcare associated (1%, n=1), other family setting (1%, n=1), work (1%, n=1) and was unreported or not specified for the remainder (71%, n=52).

The likely source of exposure included sibling (14%, n=10), mother (4%, n=3), father (1%, n=1), other relative (1%, n=1) and was unknown/not specified for the remainder (80%, n=58).

Antibiotic was known to be given for 89% (n=49/55) of cases where this data was provided and for 67% of all cases (n=49/73). A second antibiotic was known to be given for 40% (n=10/25) of cases where this data was provided and 14% (n=10/73) of all cases.

Three localised pertussis outbreaks were notified during 2014, with ten associated cases of illness. One was an outbreak in a private house with four ill and one was a community outbreak with three ill. The third outbreak was travel related with three ill; two of these cases were diagnosed in Ireland while the third case was diagnosed abroad and never travelled to Ireland.

The figures presented in this summary are based on data extracted from the CIDR system on 20th October 2015. These figures may differ slightly from those published previously due to ongoing updating of notification data on CIDR.

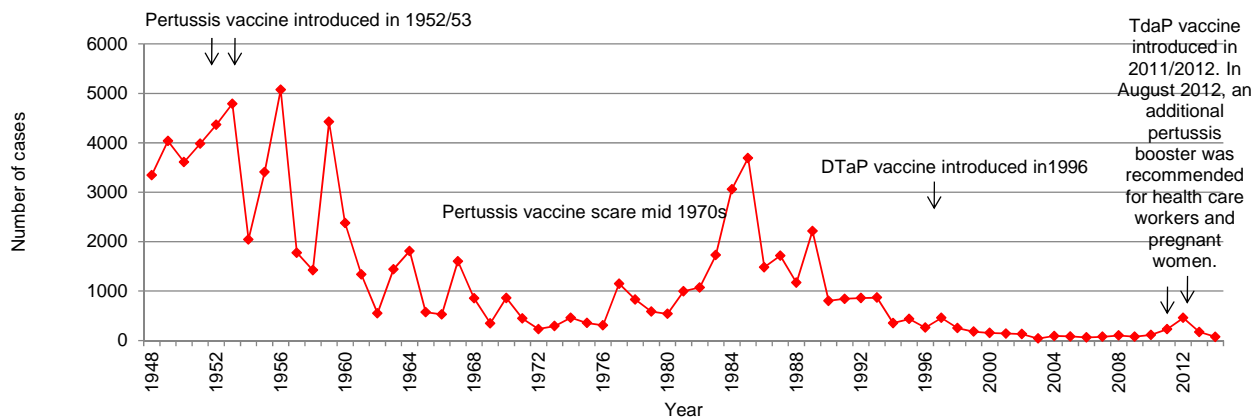


Figure 1. Number of notified pertussis cases in Ireland by year, 1948-2014
 1948-June 2000 data collated by DoHC
 July 2000-2014 data collated by HPSC

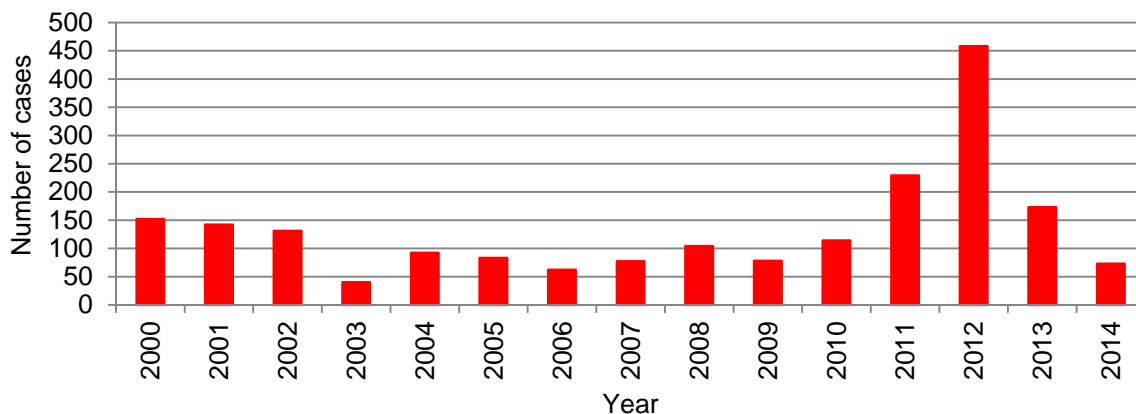


Figure 2. Number of notified pertussis cases in Ireland by year, 2000-2014

Table 1. Number of pertussis cases notified and the crude incidence rate per 100,000 population (CIR) by HSE Area in 2014

HSE Area	Number	CIR
HSE E	25	1.5
HSE M	1	0.4
HSE MW	9	2.4
HSE NE	5	1.1
HSE NW	5	1.9
HSE SE	8	1.6
HSE S	9	1.4
HSE W	11	2.5
Total	73	1.6

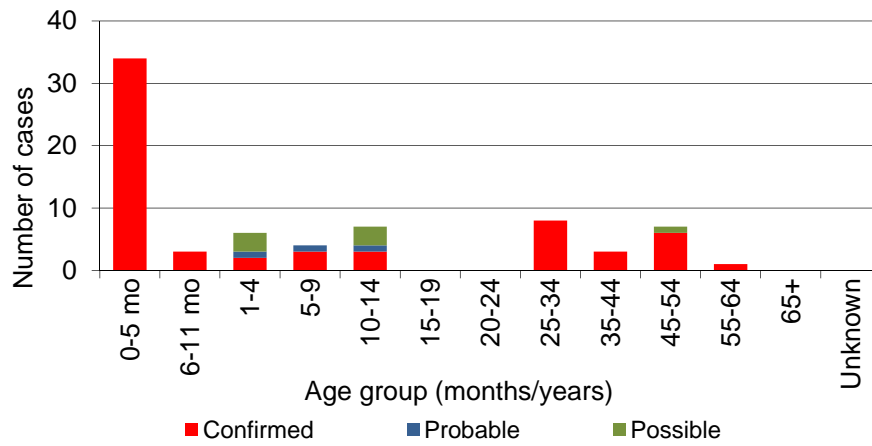


Figure 3. Number of notified pertussis cases in 2014 by age group and case classification. 'Mo' in graph indicates months ie 0-5 months and 6-11 months, the remaining age groups are in years

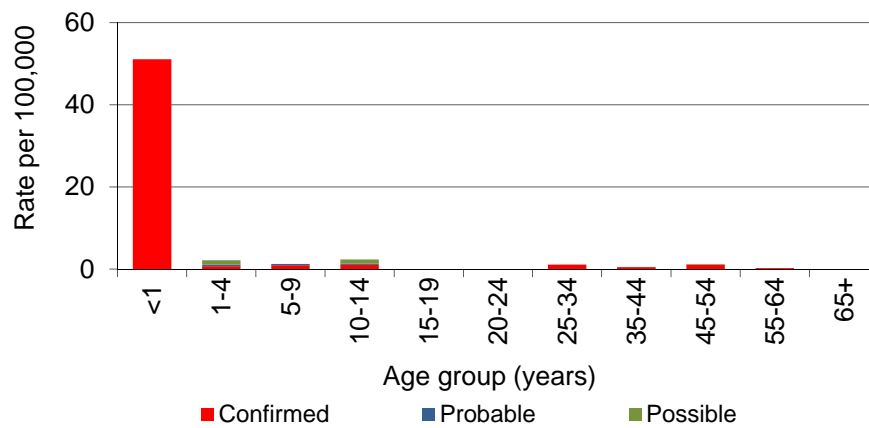


Figure 4. The age specific incidence rate (per 100,000 population) of notified pertussis cases in 2014 by case classification