

1.6 Pertussis

Summary

Number of cases, 2015: 117
 Number of cases, 2014: 73
 Crude incidence rate, 2015: 2.5/100,000

Following an increase in pertussis in 2012 with 458 notifications (10.0/100,000), pertussis declined to 73 cases (1.6/100,000) in 2014 but increased slightly in 2015 with 117 cases (2.5/100,000) notified (figures 1 and 2).

Of the 117 cases in 2015, 64% (n=75) were classified as confirmed, 7% (n=8) were classified as probable and 29% (n=34) 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 (table 1).

Fifty-seven percent of cases (n=67) were female and 43% (n=50) were male.

The largest number of cases and the highest age-specific incidence rate were in children aged less than one year followed by those in the age group 1-4 years (figures 3 and 4). Twenty nine percent (n=34/117) of all cases were aged less than six months of age. Six percent (n=7/117) of all cases were aged less than two months of age.

Maternal antibodies from women immunised before pregnancy wane quickly and the concentration of pertussis antibodies is unlikely to be high enough to provide passive

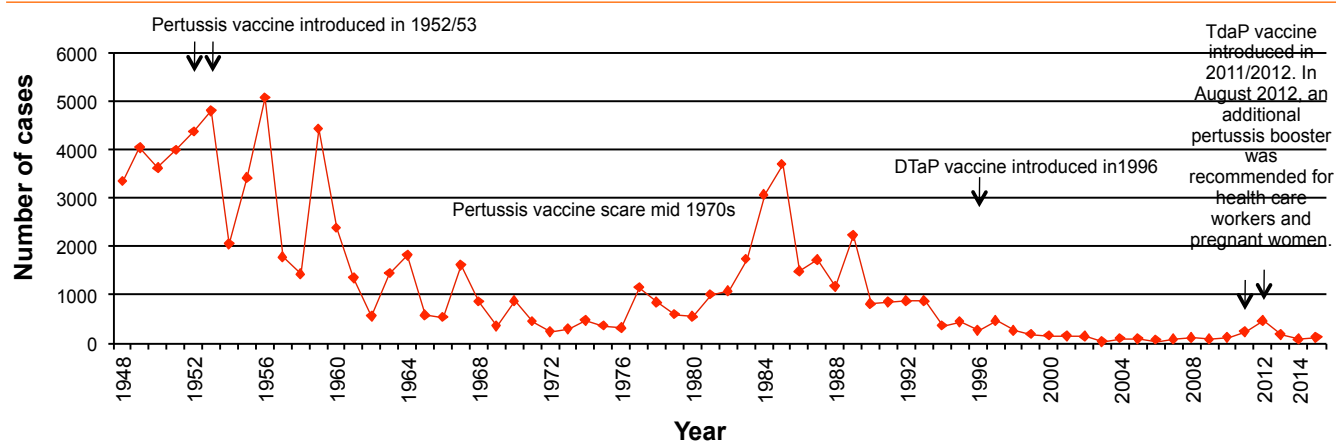


Figure 1. Number of notified pertussis cases in Ireland by year, 1948-2015
 1948-June 2000 data collated by DoHC
 July 2000-2015 data collated by HPSC

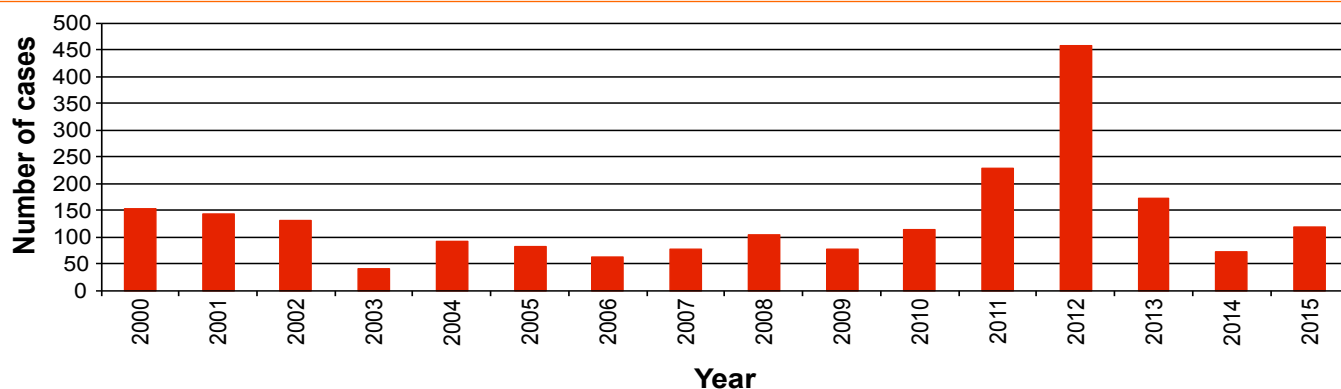


Figure 2. Number of notified pertussis cases in Ireland by year, 2000-2015

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.

In 2015, data on maternal antenatal vaccination status was provided for 27 children aged less than one year (69%, n=27/39). The mothers of 24 of these infant pertussis cases (62%, n=24/39) were unvaccinated during the antenatal period. Gestational age at birth was reported for seven of these 24 cases and ranged from 32 to 40 weeks with a median gestational age at birth of 39 weeks and a mean of 38 weeks. Three of the mothers of the infant pertussis cases (8%, n=3/39) reported vaccination during the antenatal period; one was vaccinated at 28 weeks gestation, one at 35 weeks gestation while this data was unreported for the third case.

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.immunisation.ie> for additional information on pertussis vaccination recommendations.

In 2015, the number of doses of pertussis vaccine the cases received was reported for 66% (n=77/117) of cases. Twenty seven percent of cases (n=32/117) were unvaccinated; these cases ranged in age from one month to 73 years, with 59% (n=19/32) of these cases aged less than six months. Twenty two percent of the unvaccinated cases (n=7/32) were less than two months of age and were therefore not eligible for pertussis vaccine in the Irish schedule.

Nine percent (n=10/117) of cases were reported to have one dose of pertussis vaccine, all were less than eight months of age. Two percent (n=2/117) had two doses of pertussis vaccine, these cases were five months of age. Twenty one percent (n=24/117) had three doses of pertussis vaccine, these cases ranged in age from 9 months to 12 years. Eight percent (n=9/117) had four doses of pertussis vaccine, these cases ranged in age from six to 34 years. Of the cases reported to have four doses of pertussis vaccine one third were classified as confirmed (n=3/9) and 56% (n=5/9) had all four vaccine dates recorded.

Country of birth was reported as Ireland for 42 cases, Philippines for one, United Kingdom for one, and was unknown or not specified for the remainder (n=73).

Where data were provided, reported symptoms included cough (100%, n=86/86), paroxysmal cough (97%, n=87/90), any inspiratory whoop (74%, n=56/76), post-tussive vomiting (62%, n=49/79), choking episodes in infant (50%, n=13/26), apnoea (34%, n=25/74) and cyanosis (33%, n=22/66). Where data were provided, reported complications included pneumonia (3%, n=2/70), seizures (3%, n=2/71) and conjunctival haemorrhages (2%, n=1/66).

Thirty three cases were hospitalised, representing 28% (n=33/117) of all cases and 38% (n=33/87) of cases where hospitalisation data was known. Seventy nine percent (n=26/33) of those hospitalised were aged less than one year and 18% (n=6/33) were less than two months of age.

One of the cases was recorded as having long-term sequelae following infection.

Table 1. Number of pertussis cases notified and the crude incidence rate per 100,000 population (CIR) by HSE Area in 2015

HSE Area	Number	CIR
HSE E	48	3.0
HSE M	7	2.5
HSE MW	1	0.3
HSE NE	14	3.2
HSE NW	4	1.5
HSE SE	14	2.8
HSE S	14	2.1
HSE W	15	3.4
Total	117	2.5

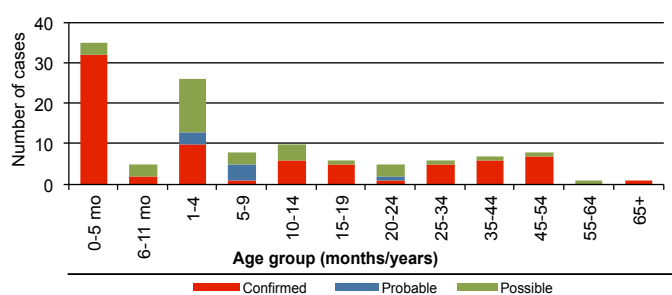


Figure 3. Number of notified pertussis cases in 2015 by age group and case classification.

'Mo' in graph indicates months ie 0-5 months and 6-11 months, the remaining age groups are in years

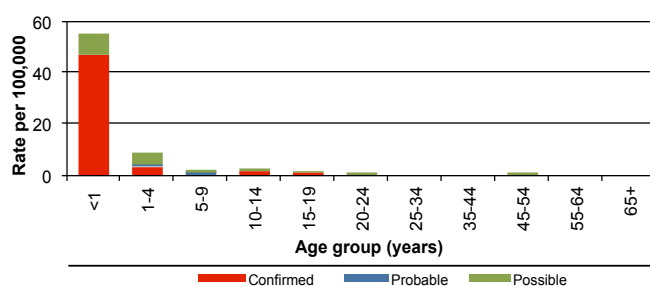


Figure 4. The age specific incidence rate (per 100,000 population) of notified pertussis cases in 2015 by case classification

Of the 117 cases, the likely setting of exposure to pertussis included home (23%, n=27), school (3%, n=3), other family setting (2%, n=2), crèche/childcare (1%, n=1), work (1%, n=1), and was unreported or not specified for the remainder (71%, n=83).

The likely source of exposure included sibling (8%, n=9), other relative (5%, n=6), mother (3%, n=4), father (2%, n=2), and was unknown or not specified for the remainder (82%, n=96).

Antibiotic usage was reported for 92% (n=81/88) of cases where this data was provided and for 69% of all cases (n=81/117). A second antibiotic was known to be given for 28% (n=23/81) of cases given a first antibiotic and known not to be given for 36% (n=29/81) of cases given a first antibiotic while this information was not provided for the remainder (36%, n=29/81).

Six localised pertussis outbreaks were notified during 2015, with 14 associated cases of illness. All outbreaks were associated with private houses.

The figures presented in this summary are based on data extracted from the CIDR system on 22nd August 2016. These figures may differ slightly from those published previously due to ongoing updating of notification data on CIDR.