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Laboratory confirmed cases of pertussis (England): October to December 2017

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Laboratory confirmed cases of pertussis (England): October to December 2017

In England there were 923 laboratory confirmed cases of pertussis (culture, PCR, serology or oral fluid) reported to the Public Health England (PHE) pertussis enhanced surveillance programme in the fourth quarter of 2017, from October to December 2017 (table 1). Total cases were 32% lower than those reported in the same quarter of 2016 (1362 cases) and 18% lower than the 1125 cases reported in the fourth quarter of 2015.

A national outbreak of pertussis [1] was declared by the HPA in April 2012 and, as a response to the ongoing outbreak, the Department of Health (DH) introduced a temporary immunisation programme for pregnant women from October 2012 [2]. In June 2014 the Joint Committee on Vaccination and Immunisation (JCVI) recommended that the programme should continue for a further five years [3] based on UK evidence of impact, high effectiveness and safety and continuing high levels of disease [4,5,6,7]. From 1 April 2016 the recommended gestational age for vaccination was revised to between 20-32 weeks but can be given as early as 16 weeks [3].

Following the peak in 2012 an overall decrease in pertussis was observed between 2013 and 2015. A relative increase in pertussis activity occurred in 2016 consistent with pre-existing epidemiological trends of 3-4 yearly cyclical peaks (Figure 1).

In the fourth quarter of 2017, the greatest number of laboratory confirmed cases in England continues in individuals aged 15 years and over although the highest disease incidence persists in infants <3 months. Pertussis activity in all infants <1 year of age was lower in the fourth quarter of 2017 (28 cases) than 2016 (36 cases) and 2015 (38 cases) but higher than the equivalent periods in 2013 and 2014 (14, 18 cases respectively) (table 2).

Confirmed cases aged 6-11 months were higher (34 cases) in 2016 than in any year since the introduction of enhanced surveillance in 1994. There were three laboratory confirmed cases in the fourth quarter of 2017 bringing the total to 17 cases in 2017. This infant age group is known to have high levels of protection after completion of the primary immunisation programme.

Overall activity remains higher in all age groups from 1 year and older, relative to years preceding the pre-2012 peak. Ascertainment in those aged 5-16 years has improved with availability of oral fluid testing since 2013 (See the guidelines for the public health management of pertussis for [8] for details of appropriate laboratory investigation of suspected cases of pertussis which is affected by the age of the suspect case and time since onset of their symptoms).

Pertussis vaccine coverage for pregnant women averaged 69.8% across July and September 2017 [9]. Extended eligibility criteria for the vaccine may have contributed to the increase in uptake observed over the last couple of years [10]. Vaccine coverage in 2017 remains high relative to corresponding time points in previous years.

There have been no reported deaths in infants with pertussis confirmed between October and December 2017. Of the eighteen infants who have died following confirmed pertussis disease and who were born after the introduction of the maternal programme (on 1 October 2012), 16 were born to mothers who had not been immunised against pertussis during pregnancy.

Surveillance data in young infants following the introduction of the pertussis immunisation in pregnancy programme continues to demonstrate that a relatively low incidence has been maintained in this age group, with expected seasonal increases. It is important to be aware, however, that raised levels of pertussis persist in groups aged 1 year and older. Women should continue to be supported in accessing immunisation against pertussis during pregnancy (ideally between 20-32 weeks) to optimise protection for their babies from birth.

Table 1: Laboratory-confirmed cases of pertussis by age and testing method in England, October to December 2017.

Age group	Culture*	PCR	Serology	Oral fluid only	Total
<3 months	4	14	0	0	18
3-5 months	1	6	0	0	7
6-11 months	1	2	0	0	3
1-4 years	1	1	13	0	15
5-9 years	0	2	24	6	32
10-14 years	1	1	44	11	57
15+ years	2	8	778	3	791
Total	10	34	859	20	923

* Culture confirmed cases may additionally have tested positive by any other method, PCR confirmed cases may have additionally tested positive by serology or OF and serology confirmed cases may also have been confirmed by OF. Submission of all presumptive *B. pertussis* isolates is encouraged for confirmation of identity and to allow further characterisation for epidemiological purposes.

Figure 1: Total number of laboratory-confirmed pertussis cases per quarter in England, 2008 to 2017.

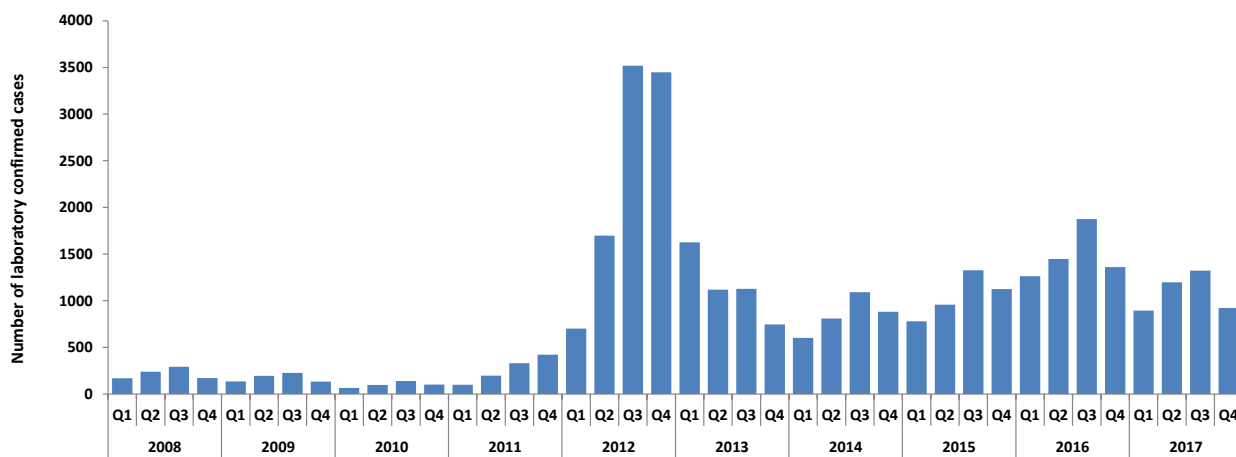


Table 2: Laboratory-confirmed cases of pertussis by age and year England, October to December: 2012 - 2017

Age group	2012	2013	2014	2015	2016	2017
<3 months	72	13	13	32	21	18
3-5 months	10	1	4	4	10	7
6-11 months	5	0	1	2	5	3
1-4 years	45	24	21	20	27	15
5-9 years	59	24	34	56	50	32
10-14 years	240	47	84	88	100	57
15+ years	3018	638	725	923	1149	791
Total	3449	747	882	1125	1362	923

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1. *HPR* 6(15), 13 April 2012.
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9. *HPR* 12(01), 5 January 2018.
10. *HPR* 11(34), 29 September 2017.

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About Health Protection Report

Health Protection Report is a national public health bulletin for England and Wales, published by Public Health England. It is PHE's principal channel for the dissemination of laboratory data relating to pathogens and infections/communicable diseases of public health significance and of reports on outbreaks, incidents and ongoing investigations.

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