



## Infection report

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### Immunisation

#### **Laboratory confirmed cases of pertussis reported to the enhanced pertussis surveillance programme in England during January to March 2015 (Q1/2015)**

In England there were 785 laboratory confirmed cases of pertussis (culture, PCR, serology or oral fluid) reported to the Public Health England (PHE) pertussis enhanced surveillance programme in the first quarter of 2015, from January to March (table 1). Total cases were 30% higher than those reported in the same quarter of 2014 (602 cases between January and March 2014).

Typically pertussis activity peaks in quarter 3 and then declines (figure 1). The continued increase observed in each successive quarter between the first quarter of 2011 and third quarter of 2012 was unusual. The HPA declared a national outbreak of pertussis (level 3 incident [1]) in April 2012 and, as a response to the ongoing outbreak and a high number of infant deaths, the Department of Health announced the introduction of a temporary immunisation programme for pregnant women on 28 September 2012 [2]. The most recent PHE figures reported that 62.3% of mothers due to give birth in December 2014 had been immunised with a pertussis containing vaccine in pregnancy in England, the highest recorded coverage since the programme started [3]. From April 2014 the collection of vaccine coverage data has change from a manual to an automated system [4] and data for January to March 2015 will be published in July 2015.

Following the high levels of activity in 2012, an overall decrease has been observed with slight increases in the third quarters of 2013 and 2014, in line with the usual seasonal pattern. The highest number of laboratory confirmed cases in England has persisted in individuals aged 15 years and over whilst disease incidence continues to be highest in infants <3 months. The number of confirmed cases in infants less than 3 months in the first quarter of 2015 (16 cases) was 33% higher than the same quarter in 2014 (12 cases). One infant with laboratory confirmed pertussis tested between January and March was reported to have died.

Surveillance data in young infants following the introduction of a programme to immunise pregnant women are encouraging as a relatively low incidence has been maintained, with expected seasonal increases. It is important to be aware, however, that raised levels of pertussis persist in older age groups and women should therefore continue to be encouraged to be immunised against pertussis during pregnancy in order to protect their babies from birth. The pertussis immunisation in pregnancy programme in England has shown high levels of protection against pertussis in babies born to vaccinated mothers [5,6]. The Medicines and Healthcare

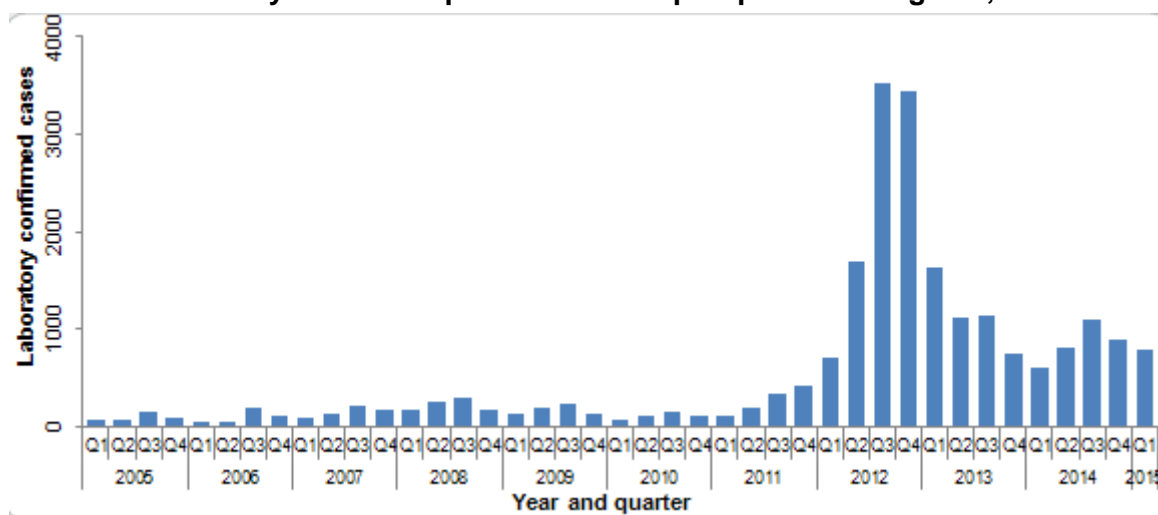
Products Regulatory Agency also found no safety concerns relating to pertussis vaccination in pregnancy based on a large study of nearly 18,000 vaccinated women with similar rates of normal, healthy births in vaccinated and in unvaccinated women [7].

Please see previous reports for details of appropriate laboratory investigation of suspected cases of pertussis which may be affected by the age of the suspect case and time since onset of their symptoms.

#### Laboratory-confirmed cases of pertussis by age and testing method in England, Jan - March 2015

Age group	Culture	PCR	Serology	Oral fluid only	Total
<3 months	1	14	1	–	16
3-5 months	2	3	1	–	6
6-11 months	1	1	–	–	2
1-4 years	2	2	11	–	15
5-9 years	–	–	29	10	39
10-14 years	–	1	69	12	82
15+ years	5	–	617	3	625
<b>Total</b>	11	21	728	25	785

#### Total number of laboratory-confirmed pertussis cases per quarter in England, 2005 to 2015 (Q1)



#### References

1. [Health Protection Report 6\(15\)](#), 13 April 2012.
2. Department of Health: <https://www.gov.uk/government/news/pregnant-women-to-be-offered-whooping-cough-vaccination>
3. Public Health England: <https://www.gov.uk/government/publications/pertussis-vaccine-uptake-in-pregnant-women-october-2012-to-march-2014>
4. Public Health England: <https://www.gov.uk/government/publications/prenatal-pertussis-vaccine-uptake-surveys-data-collection-via-immform>
5. Amirthalingam G, Andrews N, Campbell, Ribeiro S, Kara E, Donegan K, *et al* (2014). Effectiveness of maternal pertussis vaccination in England: an observational study. *The Lancet*.
6. Dabrera G, Amirthalingam G, Andrews N *et al* (2012). A case-control study to estimate the effectiveness of maternal pertussis vaccination in protecting newborn infants in England and Wales, 2012–2013. *Clin Infect Dis*.
7. Donegan K, King B, Bryan P. Safety of pertussis vaccination in pregnant women in UK: observational study. *BMJ* 2014, **349**.