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Pertussis vaccination programme for pregnant women update: vaccine coverage in England, April to June 2018

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Pertussis vaccination programme for pregnant women update: vaccine coverage in England, April to June 2018

This report presents pertussis vaccine coverage in pregnant women in England for the period April to June 2018, updating previous data reported for January to March 2018 [1].

Following increased pertussis activity in all age groups, including infants under three months of age, and the declaration of a national pertussis outbreak in April 2012 [2] pertussis vaccine has been offered to pregnant women since 1 October 2012 [3]. The prenatal pertussis vaccination programme aims to minimise disease, hospitalisation and deaths in young infants, through intra-uterine transfer of maternal antibodies, until they can be actively protected by the routine infant programme with the first dose of pertussis vaccine scheduled at eight weeks of age [4]. In June 2014 the Joint Committee on Vaccination and Immunisation (JCVI) considered available data and, based on the high effectiveness and safety of the programme, advised it should continue for a further five years [5]. In February 2016 the JCVI considered new evidence demonstrating that vaccination earlier in pregnancy would increase opportunities during pregnancy for vaccination, without detrimentally affecting the protection afforded to the infant [6, 7]. Based on this, JCVI advised that vaccination could be offered from gestational week 16, although for operational reasons, vaccination should ideally be offered from around 20 weeks, on or after the foetal anomaly scan [8]. This advice was implemented from April 2016 and the vaccine is now offered through general practice as well as some maternity services.

During the first six months of 2018 confirmed pertussis cases were lower than the equivalent period in 2017, including cases in infants under three months of age [9]. Reported pertussis activity during 2017 in England was 27% lower than the total number of cases reported in 2016 (a peak pertussis year due to pre-existing cyclical trends every three to four years) [10,11]. After the introduction of the maternal programme in 2012, reported incidence remained higher in all age groups from one year and older relative to years preceding the pre-2012 peak. In young infants under three months of age targeted by the programme, however, disease levels fell back to those observed before the 2012 peak and are still in line with those seen in earlier (pre-2012) peak years.

Key points

- Pertussis vaccine coverage in pregnant women averaged 68.2% across the quarter, 3.9% lower than coverage for the same quarter in 2017. This drop could represent a genuine decrease, or an increase in vaccination in maternities, which is poorly recorded in primary care records.
- Average annual coverage for the financial year 2017-18 was 71.9%.

Methods

General practice (GP) level pertussis vaccine coverage data are automatically uploaded via participating GP IT suppliers to the ImmForm* website on a monthly basis.

ImmForm data are validated and analysed by PHE to check data completeness, identify and query any anomalous data and describe epidemiological trends.

Since April/May 2016 (implementation date varied by GP IT supplier) the following monthly data have been collected:

- *Denominator*: number of women who delivered in the survey month, excluding miscarriages and stillbirths, regardless of gestational age
- *Numerator*: number of women receiving pertussis vaccination between week 16 of pregnancy and delivery

For accurate denominators to be extracted from GP IT systems by the automated survey and precise coverage estimates to be calculated, it is important that the medical records of all women who have given birth have the following fields completed:

- the date of delivery
- the date of receipt of a pertussis-containing vaccine at or after week 16 of pregnancy, regardless of the setting where the vaccine was administered
- where relevant, fields indicating stillbirth or miscarriage

* ImmForm is the system used by Public Health England to record vaccine coverage data for some immunisation programmes and to provide vaccine ordering facilities for the NHS

Since 1 April 2018 several NHS England organisational changes came into effect. 18 CCGs merged into six new CCGs which are reflected in the attached data tables [12]. The new CCGs are:

- NHS Bristol, North Somerset and South Gloucestershire CCG (15C)
- NHS Leeds CCG (15F)
- NHS Berkshire West CCG (15A)
- NHS East Berkshire CCG (15D)
- NHS Buckinghamshire CCG (14Y)
- NHS Birmingham and Solihull CCG (15E)

Additionally, the South of England Commissioning Region (Y57) split into two new Commissioning Regions with each having two new NHS England Local Teams:

South West Commissioning Region (Y58)

NHS England South West (South West South) (Q85)

NHS England South West (South West North) (Q86)

South East Commissioning Region (Y59)

NHS England South East (Hampshire, Isle of Wight and Thames Valley) (Q87)

NHS England South East (Kent, Surrey and Sussex) (Q88)

Participation and data quality

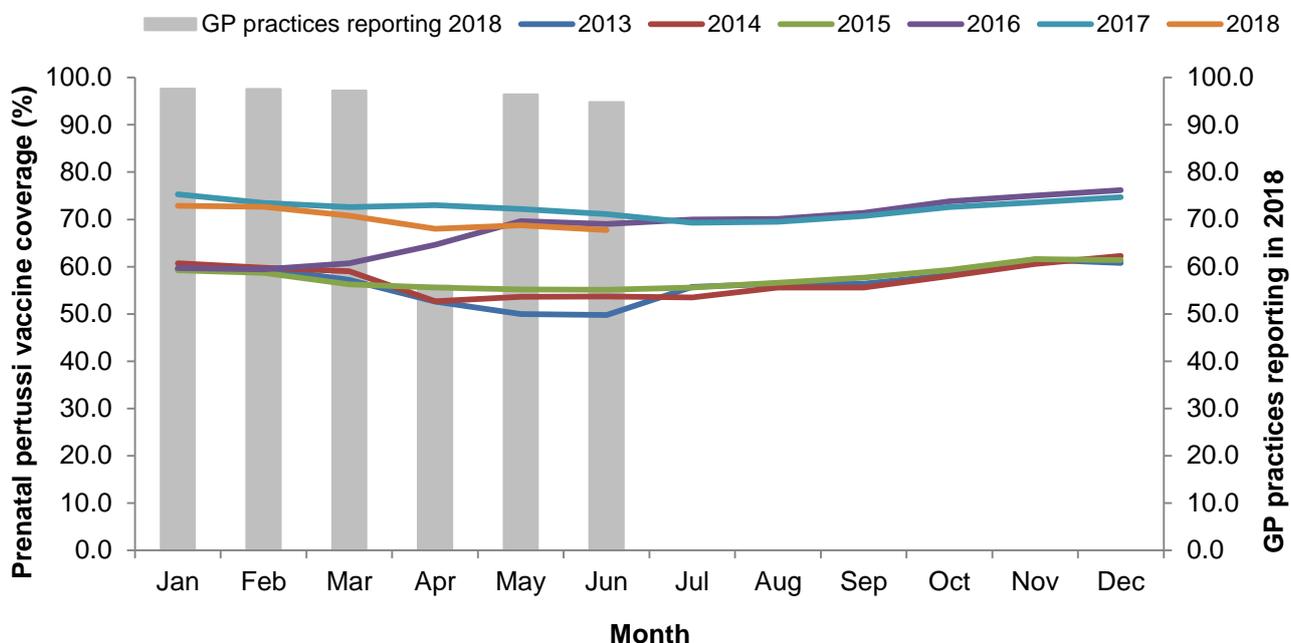
Data from the smallest IT supplier were unreliable since July 2017 and continue to be excluded for April to June 2018. As a result, local prenatal pertussis coverage estimates for a small number of LTs and CCGs have reduced participation from GP practices, particularly in South West England. Additionally, data from one of the largest IT suppliers was not returned during in April 2018. Consequently, national GP practice representation varied, between 56.0% in April and 96.5% in May.

Results

Pertussis vaccine coverage decreased slightly from 68.0% in April 2018 to 67.8% in June 2018, following the same seasonal trends as in previous year (Figure 1). However, monthly coverage between April and June 2018 was between 3.3% and 5.0% below coverage reported for the same period in 2017 (3.9% below on average). Over the 2017-18 financial year, average coverage was 71.9%

During January to March, prenatal pertussis vaccine coverage by NHS England LT ranged from 56.2% (London, June) to 79.7% (Yorkshire and Humber, April) (Table1).

Figure 1. Monthly pertussis vaccination coverage (%) in pregnant women: England, 2013-2018



Footnotes:

1. New IT specification implemented in March/April 2016 [11]; coverage reported prior to this date is likely to have been underestimated.
2. Women first offered pertussis vaccine from 20 weeks gestational age in April 2016 would have been expected to deliver in August 2016.
3. Data from one of the largest IT suppliers were missing in April 2017

Discussion

Prenatal pertussis vaccine coverage has dropped below 70% and below coverage for the same time period in 2017. However, the overall coverage is higher than that seen in 2015 and previous years.

Factors that could have contributed to the overall increase in coverage observed since April 2016 were described in the April to September 2016 report [13]. Women who received vaccine from as early as 20 weeks were likely to be included in the data from August 2016 onwards for women delivering around the time of their due date. The longer period available for vaccination, including a greater opportunity for signposting and reminders, could be contributing to an increase in coverage. Although the reasons for the drop in coverage this quarter are unclear, it is possible that as the provision of pertussis vaccine in maternities increase, pregnant women choose to be vaccinated there rather

than primary care. Because vaccines delivered in maternities are poorly recorded in primary care, this would translate to a net, artefactual decrease in coverage recorded in primary care. This requires further investigation,

Pertussis activity is lower to date in 2018 compared to the same period in 2017 a cyclical peak in cases in 2016. Disease levels remain elevated in older age groups and so unprotected young infants continue to be at risk of infection with the increased possibility of serious complications in this age group. GPs, practice nurses, obstetricians and midwives should continue to encourage pregnant women to receive the pertussis vaccine, ideally between weeks 20 and 32 of their pregnancy (but up to term) to optimise protection for their babies from birth [8]. Between April and June 2018, pertussis vaccine coverage varied by more than 20% each month between Local Teams. Identifying examples of good practice in areas achieving consistently high coverage for pertussis vaccination during pregnancy and applying them to low coverage areas may help address this gap.

There are limitations to the data presented in this report. First, completeness of data is reliant on the recording of delivery dates in the mothers' medical records and comparison of these data with national data on maternities [14], indicates that in 2016 these data represented about 65% of the population of pregnant women. A recent PHE report (unpublished) suggests that maternity notes regarding pregnancy and delivery are often scanned or archived, rather than coded in an extractable format.

Second, the survey does not cover all GP practices in England. Amongst those GPs included there may be differential completeness of the recording of delivery dates. Coverage may be overestimated if women who have received the vaccine are more likely to have their delivery date recorded. Furthermore, women not registered with a GP (and therefore less likely to be having regular contact with the health service prior to delivery) will not be captured by this reporting system. Following the change in recommendation for eligibility of the vaccine around the time of the 20 week scan, some maternities have started offering the pertussis vaccine, and PHE is in the process of mapping the pertussis vaccine offer in maternities across England. This may increase vaccine coverage, but the extent to which doses administered in maternity settings are recorded in GP systems (used in this report) is unknown, and is currently being investigated. Continued support in the delivery of this important programme has been sought from service providers (GP practices and maternity units), Screening and Immunisation Teams and Health Protection Teams. The continued high coverage reported here suggests the delivery of this

programme is becoming better embedded. Screening and Immunisation Teams should continue to update service providers on the current epidemiology of the disease, the recent changes to and effectiveness of the vaccination programme, and the need to maintain and improve coverage achieved thus far. If coverage, and ultimately the impact of the programme itself, is to be accurately monitored, it is essential that GPs and practice nurses continue to ensure that vaccination and date of delivery are recorded in the patient's GP record. In areas that have commissioned maternity units to offer pertussis vaccines in pregnancy, it is important that providers ensure doses of vaccines given to individual women are also communicated to the woman's GP. Ongoing research suggests that vaccines administered in maternity units are under-recorded in GP notes resulting in underestimated vaccine coverage. Maternity units not offering pertussis vaccines to pregnant women should continue to discuss its importance, making use of available resources [15] and sign-post the woman to her GP to receive the vaccine.

Table 1. Monthly pertussis vaccination coverage (%) in pregnant women by NHS England Local Team: England, April to June 2018 and overall coverage from April 2017 to March 2018

Local Team	Annual Apr-17 to Mar-18	Apr-18	May-18	Jun-18
LONDON	59.46	59.3	56.5	56.2
MIDLANDS AND EAST (CENTRAL MIDLANDS)	70.28	67.7	70.8	70.6
MIDLANDS AND EAST (EAST)	71.30	72.5	69.7	68.5
MIDLANDS AND EAST (NORTH MIDLANDS)	73.03	71.2	72.7	69.5
MIDLANDS AND EAST (WEST MIDLANDS)	68.61	68.7	67.9	65.5
NORTH (CHESHIRE AND MERSEYSIDE)	74.90	71.6	68.2	71.1
NORTH (CUMBRIA AND NORTH EAST)	75.67	75.4	75.8	75.0
NORTH (GREATER MANCHESTER)	69.82	68.4	69.0	66.4
NORTH (LANCASHIRE)	67.59	64.1	66.3	59.0
NORTH (YORKSHIRE AND HUMBER)	78.89	79.7	76.4	77.4
SOUTH EAST (HAMPSHIRE, ISLE OF WIGHT AND THAMES VALLEY)	72.37	71.9	73.0	72.2
SOUTH EAST (KENT, SURREY AND SUSSEX)	73.59	72.7	71.8	71.0
SOUTH WEST (SOUTH WEST NORTH)	74.53	72.1	72.8	71.1
SOUTH WEST (SOUTH WEST SOUTH)	70.51	70.9	68.2	66.8
Grand Total	70.2	68.0	68.8	67.8
Annual/Monthly reported denominator	372,007	19,616	39,164	37,453

Date of data extraction: 15 October 2018

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