



Briefing note 2024/009

Date 11 March 2024

Event Recent increase in cases of *Bordetella pertussis* (whooping cough)

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IRP Level Not applicable

Incident Lead Not applicable

Instructions for Cascade

This briefing note should be cascaded as follows:

- **Devolved Administrations** to cascade to Medical Directors and other DA teams as appropriate to their local arrangements
- **Regional Deputy Directors** to cascade to Directors of Public Health
- **UKHSA microbiologists** to cascade to non-UKHSA labs (NHS labs and private)
- **UKHSA microbiologists** to cascade to NHS Trust infection leads
- **NHS labs/NHS infection leads/NHS microbiologist/NHS infectious disease specialists** to cascade to clinicians within Emergency Departments; Paediatrics; Infectious Diseases; Infection Prevention and Control; Occupational Health; Obstetrics.

Summary:

Following a recent rise in laboratory confirmed cases of pertussis across England, this briefing note is being issued to update stakeholders on the current epidemiology, trends in vaccine coverage, and relevant available resources. Health professionals have an important role in ensuring everyone during pregnancy and in infancy has the opportunity to be vaccinated.

Background and Interpretation:

National pertussis epidemiology

In England, 858 (provisional) new laboratory confirmed cases of pertussis were reported to the UK Health Security (UKHSA) pertussis enhanced surveillance programme in 2023, compared with 5949 in 2016, our last peak year. In addition, 553 (provisional) cases were laboratory-confirmed in January 2024 alone.



Interventions implemented to help control the spread of SARS-CoV-2 significantly impacted the transmission of other infectious diseases, including pertussis. Pertussis activity was consequently exceptionally low in England in recent years (49 and 69 confirmed cases in 2021 and 2022 respectively).

Of the 553 cases in January 2024, more than half (287, 51.9%) were in individuals aged 15 years or older, and almost one third (161, 29.1%) were in children aged between 10 and 14 years. Importantly, there were 22 cases in infants under the age of 3 months who are most at risk of severe disease and are too young to benefit from complete vaccination.

In the 12 years prior to the introduction of maternal pertussis vaccination in October 2012, 63 deaths occurred in babies aged under one year with confirmed pertussis. Since the introduction of pertussis vaccination in pregnancy, between 2012 and 2023, there have been 21 deaths in babies with confirmed pertussis who were all too young to be fully protected by infant vaccination. Sadly, this includes one infant death in the last quarter of 2023. Only 2 of the infants who died during this period had a mother who was vaccinated during pregnancy. Calculated maternal vaccine effectiveness against death in their infant from pertussis is very high at around 97%¹.

Further [data](#) on cases of pertussis in England have been published by UKHSA.

Vaccination programmes coverage

Pertussis vaccination for **pregnant women** was introduced nationally in 2012 to confer protection for neonates – the population most at risk from severe disease – before they are eligible for routine childhood vaccines. For optimal protection of the infant, vaccine should be given from 20-32 weeks gestation, ideally after the congenital anomaly scan. Vaccination in pregnancy is highly effective, with UKHSA analysis¹ finding around 90% vaccine effectiveness against confirmed disease and 97% protection against death from pertussis in infants under 3 months of age. However, current maternal vaccine uptake (as of Sept 2023) in England was just 57.6% (36.5% in London), down 13.6 percentage points from the programme peak in Sept 2016.

Pertussis vaccination is included in the **routine national childhood immunisation schedule**, with three doses administered (together with diphtheria, tetanus, polio, *Haemophilus influenzae* type b and hepatitis B in a combined vaccination) at 8-, 12- and 16- weeks of age, and one dose (together with diphtheria, tetanus and polio) as a pre-school booster. Current coverage (as of Sep 2023) in England is 91.3% at 1-year, and 82.7% for the pre-school booster by age 5, but with significant variation across the country, with lower uptake in inner-city areas. These figures represent a gradual decline in uptake, in keeping with other vaccine programmes, over the past decade (94.7% at 1-year, and 89.2% for the pre-school booster in March 2013).

Supporting health professionals

UKHSA has been liaising with professional networks and Royal Colleges to raise awareness of this changing pertussis epidemiology and the importance of maternal vaccination. Updated public health guidance for Health Protection Teams, and testing guidance for clinicians, has been made available and is further outlined below.



UK Health Security Agency

The promotion of vaccination remains vital. A multimedia campaign was launched by UKHSA on 4th March, promoting the uptake of vaccinations within the routine childhood programme. Resources specifically for the maternal pertussis vaccination programme are also outlined below.

A stakeholder webinar providing further updates, guidance, and an opportunity for questions to be asked is being organised by UKHSA and will be advertised shortly.

Implications & Recommendations for UKHSA Regions

Health Protection Teams are reminded about the recent issuing of updated [guidance](#) on the public health management of suspected or confirmed pertussis, which aims to support HPT's to prioritise workload given recent increases in pertussis (and other vaccine preventable) disease.

Implications & Recommendations for UKHSA sites and services

Regional UKHSA laboratories should be prepared to receive increasing numbers of samples for diagnostic primary testing of suspected pertussis by PCR (and, where appropriate, culture or serology) testing.

Implications & Recommendations for NHS

Increasing rates of pertussis will place additional burden on the NHS, especially primary care providers.

Front-line clinicians are reminded that pertussis is a notifiable disease, and should be [reported](#) where suspected to your local Health Protection Team. Testing requirements vary by age and duration of symptoms at presentation; advice on [testing for pertussis in primary care](#) is available. This includes oral fluid antibody testing that is available for 2–16-year-olds by contacting local HPTs.

Healthcare staff involved in the care of pregnant women are strongly encouraged to promote uptake of maternal vaccinations, including pertussis, in their patients and to be informed on the specific recommendations for each programme. Resources for healthcare staff and to support communication around vaccines with pregnant women are [available](#).

NHS laboratory staff are requested to refer bacterial isolates to the Respiratory and Vaccine Preventable Bacteria Reference Unit at Colindale. As described in the [National guidelines](#), PCR testing is available from Regional UKHSA laboratories and serology testing can be referred to the national reference laboratory if required.

Implications and recommendations for Local Authorities

Local Authority colleagues should be aware of the current increase in pertussis activity and potential for outbreaks in nurseries and schools. [Guidance](#) on the management of outbreaks in these settings, primarily for use by Health Protection Teams, is available.



Sources of information and further reading

- a) Latest pertussis epidemiology from UKHSA
<https://www.gov.uk/government/publications/pertussis-epidemiology-in-england-2024>
- b) Childhood vaccination coverage statistics
<https://www.gov.uk/government/statistics/cover-of-vaccination-evaluated-rapidly-cover-programme-2023-to-2024-quarterly-data>
- c) Pertussis immunisation in pregnancy: vaccine coverage (England)
<https://www.gov.uk/government/publications/pertussis-immunisation-in-pregnancy-vaccine-coverage-estimates-in-england-october-2013-to-march-2014>
- d) Pertussis: guidelines for public health management
<https://www.gov.uk/government/publications/pertussis-guidelines-for-public-health-management>
- e) Pertussis: guidance, data and analysis (including for healthcare professionals, and management of outbreaks in schools and educational settings)
<https://www.gov.uk/government/collections/pertussis-guidance-data-and-analysis>

References

1. G Amirthalingam, H Campbell, S Ribeiro, J Stowe, E Tessier, D Litt, NK Fry, Nick Andrews; Optimization of Timing of Maternal Pertussis Immunization From 6 Years of Postimplementation Surveillance Data in England; *Clinical Infectious Diseases*, Volume 76, Issue 3, 1 February 2023, Pages e1129–e1139
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