UK Health Security Agency

Changes to the childhood and adult immunisation programmes

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Proposed changes to the routine childhood immunisation programme

Background to the proposed changes to the routine childhood schedule in 2025

- Manufacturing of the Hib/MenC vaccine (Menitorix®) is to be discontinued
  - this is a commercial decision that has been made by the manufacturer (GSK)
  - as this is the only Hib/MenC vaccine available, so changes to the routine infant schedule are necessary
  - UKHSA estimates that the central stock of this vaccine will be depleted by mid-2025

- After consideration, the JCVI has advised that MenC is no longer required in the childhood schedule
  - this is due to the success of meningococcal C containing vaccine programmes and the subsequent decline of invasive meningococcal C disease
  - current excellent control of meningococcal C disease can be maintained through the adolescent MenACWY vaccine programme

- there is still a continued need for a dose of Hib vaccine during the second year of life

Current schedule

- Menitorix® vaccine provides protection against *Haemophilus influenzae type b* (Hib) and invasive capsular group C meningococcal (MenC) disease
  - this is currently given at 12 months of age
  - it is the 4th Hib containing vaccine given to children
  - the prior 3 doses of Hib antigen are given as a component of the hexavalent vaccine (DTaP/IPV/Hib/HepB) administered at 8, 12 and 16 weeks of age
  - this is currently the only remaining dose of MenC vaccine in the childhood schedule

Key JCVI advice regarding Hib and MenC control

The JCVI has advised:

- due to the success of the adolescent MenACWY programme in controlling meningococcal C disease across the whole population a dose of meningococcal C containing vaccine is no longer recommended in the childhood schedule at 12 months

- there remains a need for a dose of Hib vaccine during the second year of life

Joint Committee on Vaccination and Immunisation (JCVI) statement on changes to the childhood immunisation schedule - GOV.UK (www.gov.uk)

JCVI advice

The JCVI has advised that the following changes should come into effect nationally once the current supply of Menitorix® vaccine has been exhausted:

- an additional dose of a Hib-containing multivalent vaccine (such as the hexavalent DTaP/IPV/Hib/HepB vaccine which is given in infancy) should be administered at age 18 months.
- this replaces the Hib component of the Hib/MenC (Menitorix) given at 12 months
- this requires the introduction of a new appointment slot at 18 months of age
- the 18 month appointment slot introduces room for the second dose of MMR vaccine (MMR2) to be brought forward from 3 years 4 months to 18 months of age

The JCVI will keep emerging evidence under review, including ongoing epidemiology and disease incidence

Group C meningococcal vaccine

- the introduction of the MenC vaccination programme in 1999 led to a significant reduction in the number of cases of invasive meningococcal C disease
- the adolescent MenACWY programme commenced in 2015 and has been successful in further reducing the incidence of meningococcal C disease (as well as cases of meningococcal W disease)
- alongside this programme, a further significant decline in the spread and detection of invasive meningococcal disease (IMD) was seen because of the implementation of social distancing and lockdown measures as part of the emergency response to the COVID-19 pandemic
- modelling work found that indirect protection against MenC disease in infants is sustained by the adolescent MenACWY programme

Group C meningococcal vaccine

- over time the adolescent vaccination programme is expected to reduce carriage prevalence of groups C, W and Y to near elimination levels (group A carriage has already been almost undetectable for many years in the UK)
- due to the reduction in carriage prevalence of these meningococcal serogroups, it is predicted that by the time Menitorix® is no longer available there will be very few IMD cases caused by meningococcus groups A, C, W and Y each year, and therefore very few cases which could be prevented by a MenC-containing vaccine in infancy
- it is therefore very unlikely that an infant or toddler MenACWY immunisation campaign would be cost effective

Additional appointment

- the advice to give both the additional dose of a Hib-containing vaccine and the second dose of MMR vaccine at 18 months requires the creation of a new immunisation appointment
  - the main reason for bringing the second dose of MMR forward is to improve coverage and reduce the likelihood of measles outbreaks
  - in areas of London where the second dose of MMR was brought forward in response to local measles outbreaks in the 2000s, second dose coverage increased by an average of ~~a~~ 3.3%
  - several London boroughs have continued to administer MMR2 at age 18 months to improve their vaccine uptake (Lacy and others 2022)
  - Also ensures a further opportunity at 3 years and 4 months to offer MMR if not received at 18 months
- the JCVI considers the likely added benefit of increasing coverage for MMR2 further justifies the additional routine immunisation appointment

Hib vaccine

- the JCVI considered multiple factors in relation to the timing of the administration of the additional Hib-containing vaccine

  - the overarching aim of the Hib programme is to attain herd immunity in the population. If the aim of the programme was individual protection, the 12-month option might be considered preferable as this would boost individual protection at an earlier age
  - however, due to the success of the current Hib immunisation programme (3 infant doses followed by a single booster at age 12 months), there is minimal Hib disease currently circulating in the UK and boosting an individual child's level of protection is less necessary
  - modelling shows that Hib transmission is primarily driven by children aged 2 to 4 years, therefore vaccination at any time before then should prevent transmission
  - giving the Hib-containing vaccine dose at 18 months allows space and flexibility to consider the best schedule for future programmes
  - a dose of a multivalent Hib-containing vaccine at 18 months mitigates blunting from maternal programmes (e.g. polio)*

**Unpublished evidence from the NVEC study suggesting high maternal pertussis, tetanus and diptheria antibody levels, whilst providing good protection against these infections, may reduce the infants response to IPV when measured at 12 months*

Impact on other vaccines in the childhood programme

- although placing the Hib and diphtheria/tetanus/pertussis/polio-containing vaccine at 18 months decreases the interval between this vaccination and the next diphtheria/tetanus/pertussis/polio containing vaccine, at present, no changes to the timing of the dTaP/IPV pre-school booster administration (currently given at 3 years 4 months of age) are recommended
- having an immunisation appointment prior to school entry provides an additional opportunity for any children who may have missed previous vaccine doses to catch up with their routine immunisations
- vaccination scheduling options for babies born to hepatitis B positive mothers who are placed on the selective neonatal hepatitis B pathway are still being considered

Summary of changes for 2025

- due to the success of the adolescent MenACWY programme in controlling meningococcal C disease across the population, a dose of meningococcal C containing vaccine will no longer be recommended at age 12 months
- an additional dose of Hib-containing multivalent vaccine (such as the DTaP/IPV/Hib/HepB which is also given in infancy) should be given at age 18 months
- the second dose of MMR vaccine should be brought forward from 3 years 4 months to 18 months of age

Table 1. Childhood schedule changes for 2025.

Age	Current childhood schedule	Childhood schedule for 2025	Changes required
8 weeks	• Hexavalent 1 • MenB 1 • Rotavirus 1	• Hexavalent 1 • MenB 1 • Rotavirus 1	None
12 weeks	• Hexavalent 2 • PCV 1 • Rotavirus 2	• Hexavalent 2 • PCV 1 • Rotavirus 2	None
16 weeks	• Hexavalent 3 • MenB 2	• Hexavalent 3 • MenB 2	None
1 year	• Hib/MenC • PCV booster • MMR1 • MenB booster	• PCV booster • MMR 1 • MenB booster	Remove Hib/MenC
(New) 18 months	n/a	• Hexavalent 4 • MMR 2	New appointment with additional dose of Hib-containing multivalent vaccine (Hexa), and bring forward MMR 2
3 years 4 months	• MMR 2 • dTaP/IPV	• dTaP/IPV	Bring forward MMR 2 to 18 months of age

Schedule changes are shown in red text.

Timeline

a) the cessation of the Hib/MenC dose at 12 months: **around mid-2025**

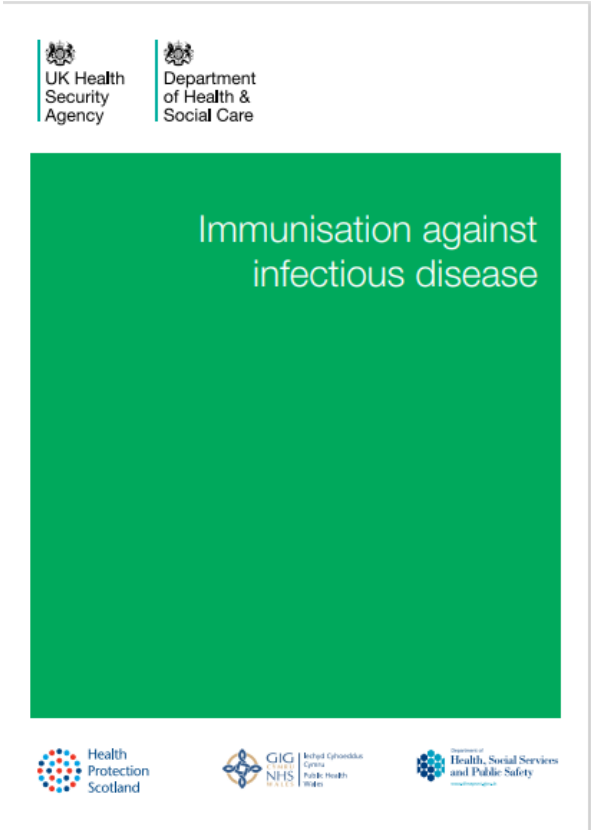
b) **six months after (a)** occurs, introducing an additional dose of Hib-containing multivalent vaccine (such as the DTaP/IPV/Hib/HepB which is also given in infancy) at age 18 months

c) **at the same time as (b),** bringing forward the second dose of measles, mumps and rubella (MMR2) from 3 years 4 months to 18 months of age

- the operational details of the changes are currently being considered and will be communicated by NHS England once agreed

Planned resources

- there will be a full range of resources and guidance for healthcare professionals, parents and carers
- all relevant Green Book chapters, PGDs and existing resources will be updated



Varicella (Chickenpox) vaccination (policy decision awaited)

- Currently there is no universal varicella vaccination programme in the UK
- Certain groups are recommended to receive the vaccine e.g. healthcare workers with patient contact and household contacts of immunocompromised individuals are recommended to receive the vaccine
- Most cases of varicella infection are mild, although children are unwell and usually have 5 or more days off school or nursery (parents will also take time off work)
- Complications from varicella include bacterial infection of skin lesions (including group A streptococcus) and in rare cases, encephalitis, pneumonitis and stroke
- Varicella is often more serious in very young infants (under 4 weeks) and adults, in particular in pregnancy when it may cause complications in both the mother and the foetus, and in adults who are immunosuppressed
- JCVI statement (Nov 2023) has recommended a universal varicella immunisation programme be introduced

Varicella (Chickenpox) vaccination (policy decision awaited)

- Recommended schedule is a 2-dose programme offering vaccination at 12 and 18 months of age using the combined MMRV (measles, mumps, rubella and varicella) vaccine
- A catch-up programme should also be initiated following implementation of a programme to prevent a gap in immunity
- Varicella vaccination is included in the routine vaccine schedules of several countries either as a 2-dose or single-dose strategy including the USA, Canada, Australia and Germany
- JCVI statement: https://www.gov.uk/government/publications/childhood-varicella-vaccination-programme-jcvi-advice-14-november-2023/jcvi-statement-on-a-childhood-varicella-chickenpox-vaccination-programme

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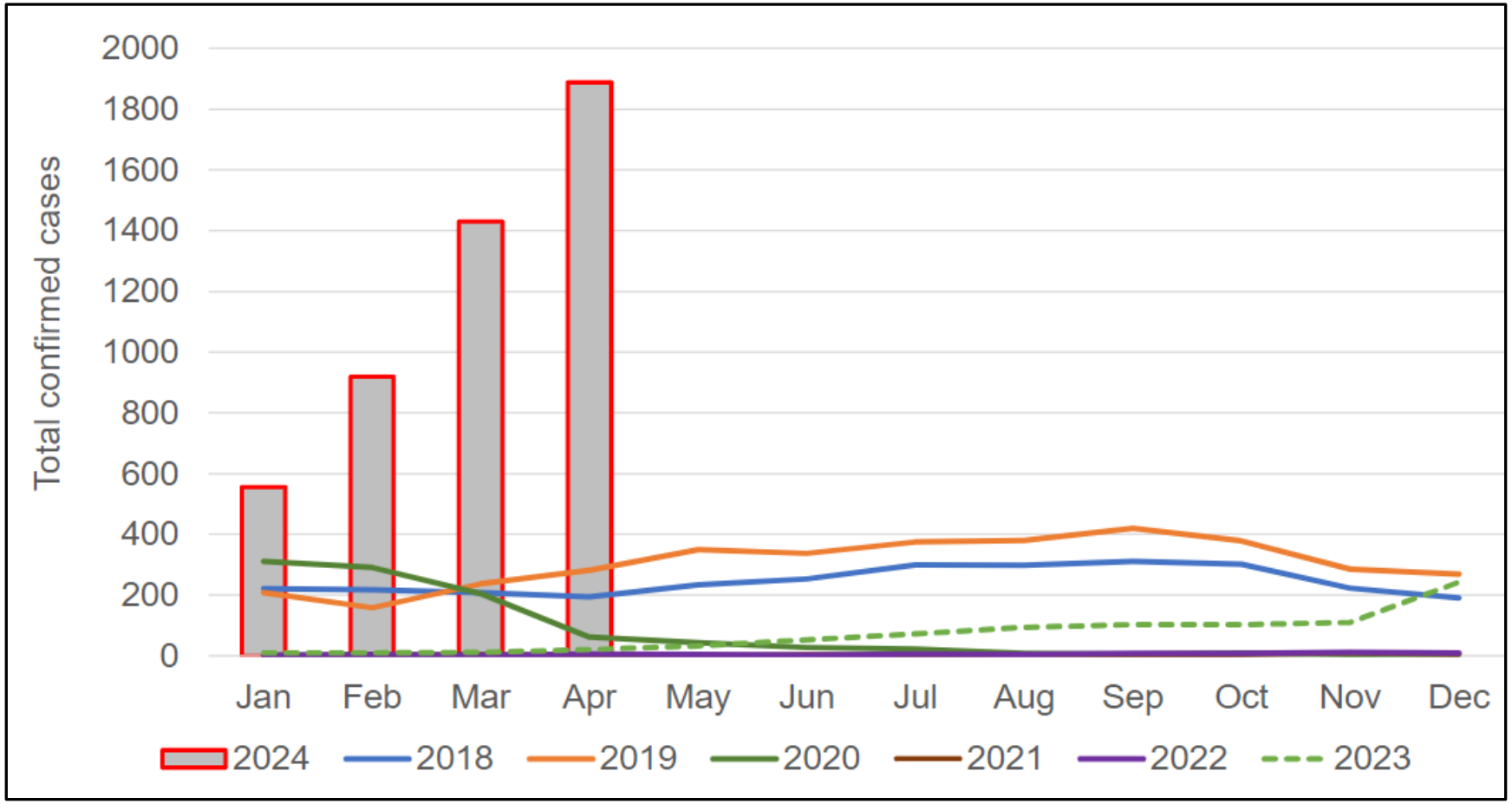
Pertussis

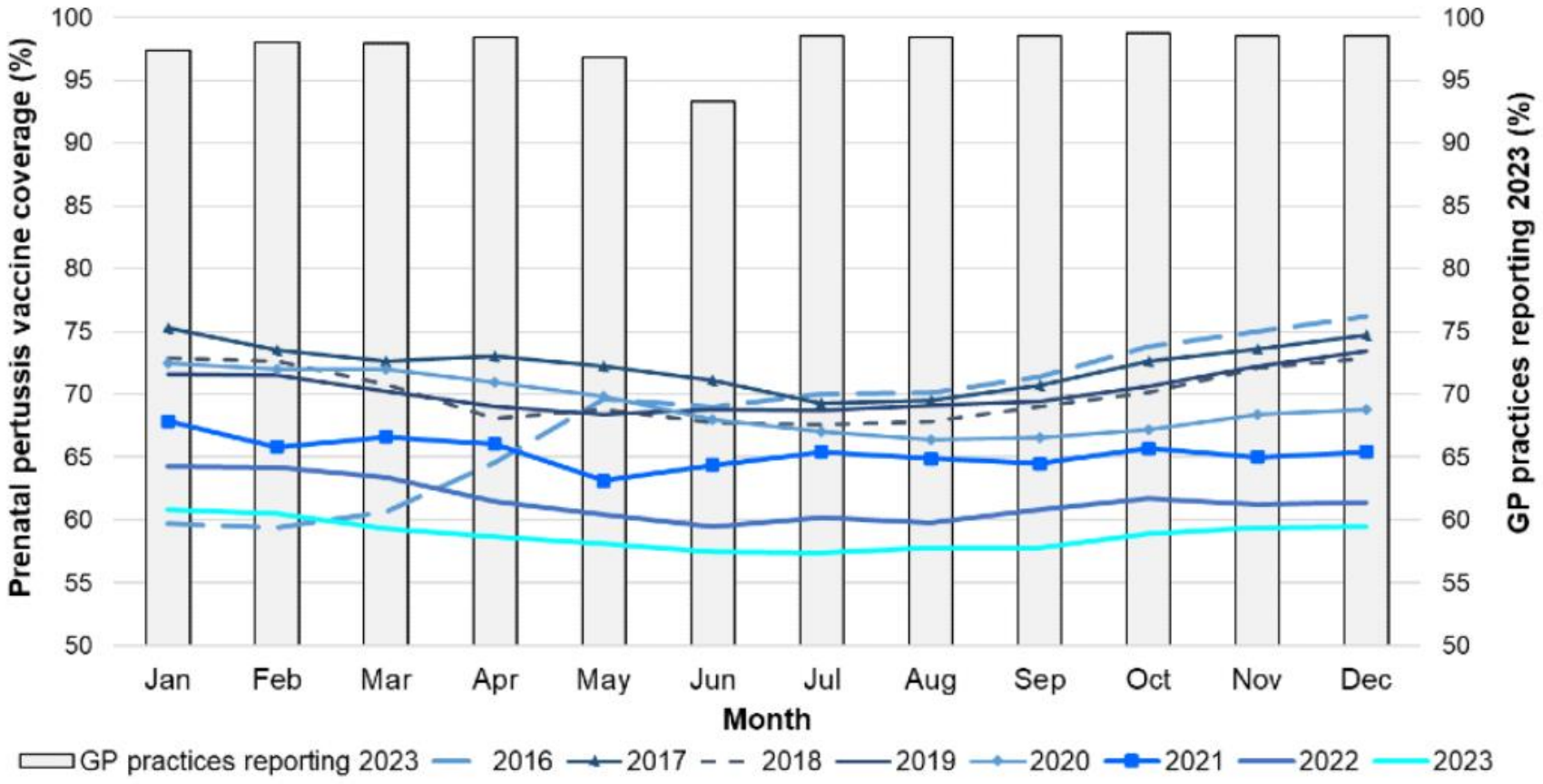
Laboratory confirmed cases of pertussis by month in England: 2018 to April 2024



There have been 8 deaths in infants who developed pertussis between January to April 2024

[Confirmed cases of pertussis in England by month - GOV.UK (www.gov.uk)]

Pertussis vaccine uptake in pregnancy

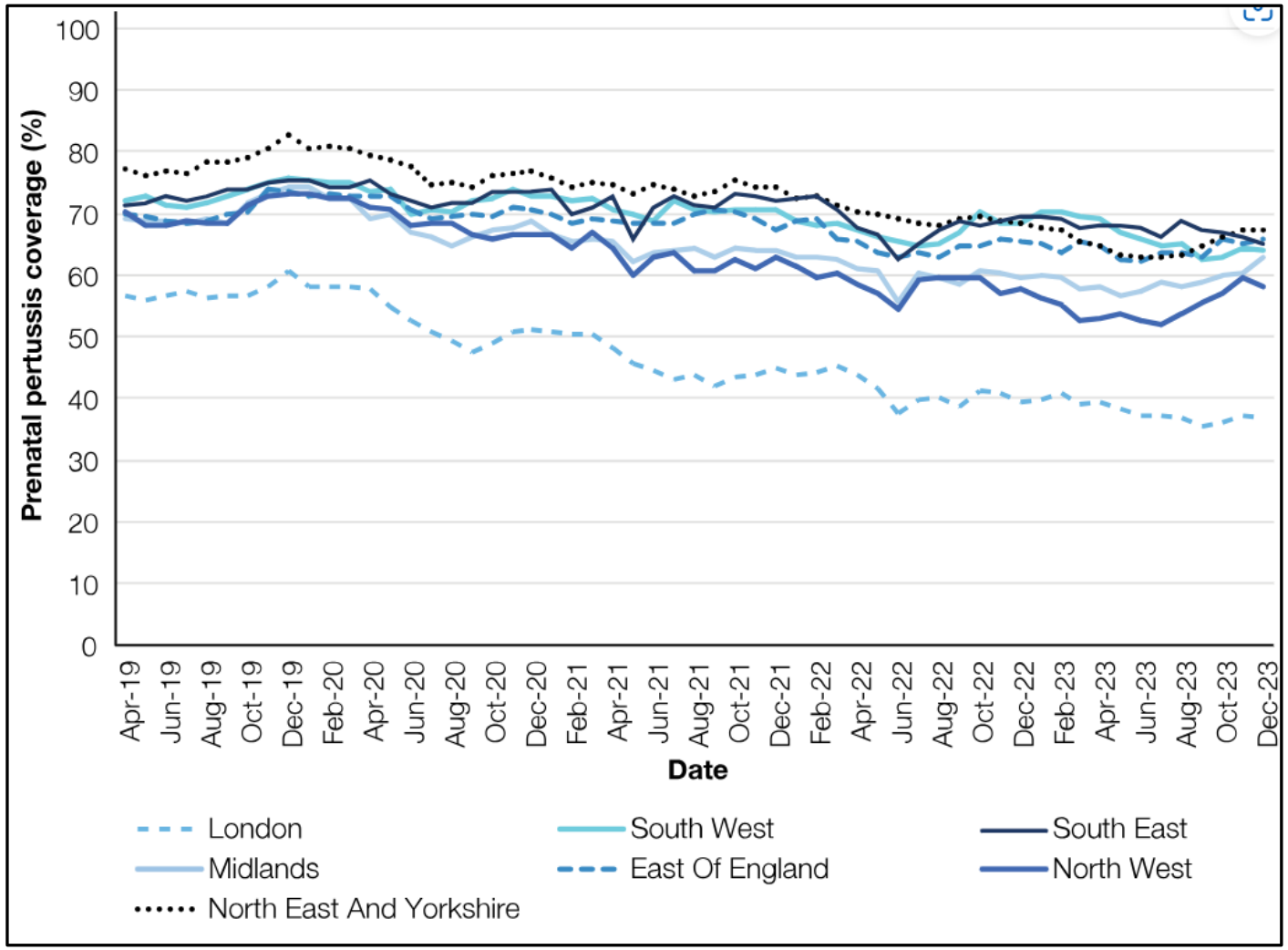


Monthly pertussis vaccination coverage (%) in pregnant women (England), 2016 to 2023

Prenatal pertussis vaccination coverage in England from October to December 2023 - GOV.UK (www.gov.uk)

Shows a 15.7% decline in coverage compared to the peak coverage (same reporting quarter of 2016 to 2017) largely driven by a decrease in London but is also reflected in other regions, such as the North West and the Midlands

Monthly pertussis vaccination coverage in pregnant women by region, April 2019 to December 2023



Switch from TdaP/IPV to TdaP vaccine, 2024

- JCVI October 2022 reviewed results of studies measuring polio antibody levels in the infants of mothers who had received pertussis-containing (dTaP/IPV) vaccines in pregnancy
- These studies showed lower antibody responses to polio (after completion of their primary infant schedule)
  - although all above protective threshold
  - no evidence that this is clinically significant

➢ JCVI advised a preference for a non-IPV-containing pertussis vaccine (TdaP) in the maternal programme

➢ TdaP vaccine has been shown to be both safe and effective in the maternal pertussis vaccine programmes in many other European countries, the USA and Australia, with millions of doses administered worldwide

➢ reduce administration of unrequired antigens

Switch from TdaP/IPV to TdaP vaccine, 2024

- From 1 July 2024, the vaccine used in the programme will change to ADACEL (Tdap). Vaccine ordering has opened.
- JCVI recognises the importance of vaccinating pregnant women to protect their babies from pertussis and advise that dTaP/IPV vaccine should still be given if ADACEL (Tdap) is not available to avoid delays in administration
- After the introduction of ADACEL on 1 July 2024, local stocks of Boostrix-IPV® can be used in the preschool programme
- Providers who do not administer pre-school boosters (e.g. maternity services), should plan to use up local stocks of Boostrix-IPV ahead of 1 July, and any remaining stocks of Boostrix-IPV may continue to be offered to pregnant women if this will prevent vaccine wastage

Supporting resources for pertussis vaccination in pregnancy

- Prenatal pertussis vaccine change from July 2024 letter Prenatal pertussis vaccine change from July 2024 letter - GOV.UK (www.gov.uk)
- Green Book pertussis chapter https://www.gov.uk/government/publications/pertussis-the-green-book-chapter-24
- PGD template Pertussis vaccine: PGD template - GOV.UK (www.gov.uk)
- Information for healthcare practitioners and slide set Vaccination against pertussis (whooping cough) for pregnant women - GOV.UK (www.gov.uk)
- pertussis vaccine in pregnancy leaflet and poster
- general vaccination in pregnancy leaflet Pregnant? Immunisation helps to protect you and your baby from infectious diseases

Mpox and Gonococcal Vaccination (policy decision awaited)

- JCVI advises that pre-exposure vaccination should target GBMSM who are at highest risk of exposure to mpox
- These risk criteria would include:

i. a recent history of multiple partners

ii. participating in group sex

iii. attending sex-on-premises venues

JCVI statement on mpox vaccination as a routine programme - GOV.UK (www.gov.uk)

- JCVI have advised a targeted programme should be initiated using the 4CMenB vaccine for the prevention of gonorrhoea in those who are at greatest risk of infection
- The 4CMenB vaccine should be offered on an opportunistic basis through specialist sexual health services to those who are at increased risk of infection with bacterial STIs e.g.

i. Recent history of gonorrhoea or other bacterial STI diagnosis, individuals should also be offered vaccination after a gonorrhoea diagnosis (whether symptomatic or asymptomatic)

ii. reporting high-risk sexual behaviours with multiple partners during sexual health screening and assessment

JCVI advice on the use of meningococcal B vaccination for the prevention of gonorrhoea - GOV.UK (www.gov.uk)

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Questions?