HSC Public Health Agency

Changes to the infant pneumococcal conjugate vaccine schedule

Information for healthcare practitioners

Summary

The UK pneumococcal conjugate vaccine (PCV) immunisation programme has successfully achieved high levels of population (herd) protection for all age groups. Currently, circulation of the 13 pneumococcal serotypes contained in the vaccine, and, therefore, the risk of disease due to these serotypes, even in those at higher risk, is very low in the UK. Prior to 2020, the PCV schedule consisted of two doses of PCV under the age of one, followed by a booster dose at one year of age. This was known as the 2+1 schedule. Since 2020, the routine children's schedule has comprised two doses of PCV13: a single dose of PCV13 alongside their routine DTaP/IPV/Hib/HepB and rotavirus immunisations at 12 weeks of age, followed by a PCV13 booster at one year of age (on or after their first birthday). This is referred to as the 1+1 PCV13 schedule. From July 2025, the timing of the 1+1 schedule will change, with the 1st dose of PCV13 being offered at age 16 weeks; the 2nd dose will continue to be offered at one year of age.

From 1 July 2025, the first PCV13 dose will move from 12 weeks of age to 16 weeks of age and the second MenB dose will be brought forward from 16 weeks of age to 12 weeks of age. To implement this change to the schedule, it is recommended that:

- **Infants who have not yet received their 12-week vaccinations** by 1 July 2025, should be vaccinated as per the new schedule timings (2nd MenB at 12 weeks and PCV13 at 16 weeks).

- **Infants who have already received their 12-week PCV13 vaccination** prior to 1 July 2025, should remain on the previous schedule and be invited for their second MenB vaccine at 16 weeks of age.

Background

The routine infant PCV programme was introduced in the UK in 2006, initially using a 7-valent vaccine (PCV7) which was replaced with the 13-valent vaccine (PCV13) in 2010. It has been highly successful, with large and sustained decreases in pneumococcal disease due to the 13 serotypes contained in the vaccine across the population and especially in young children. The PCV13 vaccine has proven to have very high effectiveness and there has been a high uptake of the vaccine for a number of years.

Given the success of the programme, both in those vaccinated, and in the wider population (through indirect population protection often referred to as 'herd immunity'), the Joint Committee of Vaccination and Immunisation (JCVI) reviewed the infant pneumococcal vaccination programme. They concluded that as the maximum direct and indirect benefit from the PCV13 programme has already been achieved, with very little carriage or disease due to the PCV13 serotypes, multiple doses of PCV13 should no longer be required in the childhood immunisation programme. Following detailed review and a stakeholder consultation, the JCVI agreed that a move from the 2+1 schedule to a 1+1 schedule was appropriate for the UK. This change to the schedule was introduced from 1 January 2020 and has been shown to successfully maintain population control of invasive pneumococcal disease (IPD) caused by PCV13 serotypes.

The 16-week dose will provide the infant with some protection against pneumococcal infection due to the vaccine serotypes and, importantly, will also prime their immune system to make a good response to the booster dose given at one year of age. The booster dose is particularly important, not only in providing individual protection, but also in preventing the vaccinated child from carrying pneumococcal bacteria in their nasopharynx and passing them on to others. This interruption of transmission is vital to sustaining the high levels of herd protection for unvaccinated susceptible individuals achieved to date in the UK.

Background to the July 2025 changes

As of July 2025 a number of changes were being made to the UK childhood immunisation schedule. Information about changes affecting other vaccines is published in the Changes to routine childhood immunisation programme: 2025 and 2026 - GOV.UK[KS1] and the relevant Green Book chapters. It is important that practitioners also consult those documents.

The JCVI recommended bringing forward the second dose of MenB vaccine to the second vaccination appointment (12 weeks of age), to provide earlier protection against this serious and sometimes fatal infection. To avoid increasing the number of injections at this second appointment, the first dose of PCV13 was moved to the third vaccination appointment (16 weeks of age).

When considering the latest change to the infant schedule, the JCVI (see JCVI meeting minutes, 2025 02) agreed that moving the first dose of PCV from 12 weeks to 16 weeks of age would not compromise longer term immunological protection (because PCV13-type IPD is very rare in infants as a result of the excellent indirect (herd) protection offered by the current programme) and may provide better immunological protection against invasive pneumococcal disease during infancy. The second dose of PCV13 will continue to be given at one year of age.

Offering the MenB vaccine at 8 and 12 weeks and the PCV13 at 16 weeks is also associated with an improved safety profile over the previous schedule for these vaccines. In the (as yet unpublished) LION MenB study that was reviewed by the JCVI, vaccinating in line with this schedule was associated with a lower rate of local and systemic adverse effects.

The epidemiology of pneumococcal disease will continue to be monitored very carefully and any changes in disease incidence in any age group can be detected, assessed and actioned quickly if needed.

Childhood PCV schedule from July 2025

Routine schedule

This section describes the schedule for the routine programme. Additional doses of PCV are required for infants and children who are asplenic, have splenic dysfunction or are severely immunocompromised – see Infants and children in clinical risk groups below.

Interval between routine PCV doses

A minimum 4-week interval should preferably be observed between the routine doses of PCV13 to ensure boosting of protection.

If the infant dose is given late (within 4 weeks of the first birthday), a minimum interval of 4 weeks should ideally still be observed before administration of the one year booster dose. However, if in the opinion of the healthcare

professional, allowing an interval may lead to further delays in administration of the dose that should be offered in the child's second year, dose two can be administered, once the child has had their 1st birthday, at any interval after the first dose to bring the child up to date with the UK schedule as soon as possible.

Infant dose

From 1 July 2025, the first PCV13 dose will move from 12 weeks of age to 16 weeks of age and the second MenB dose will be brought forward from 16 weeks of age to 12 weeks of age. To implement this change to the schedule, it is recommended that:

- Infants who have not yet received their 12 week vaccinations by 1 July 2025, should be vaccinated as per the new schedule timings (2nd MenB at 12 weeks and PCV13 at 16 weeks)

- Infants who have already received their 12 week PCV13 vaccination prior to 1 July 2025 should remain on the previous schedule and be invited for their second MenB vaccine at 16 weeks of age.

Infants with an unknown or incomplete immunisation history

If infants are delayed in receiving their primary immunisations, they should be offered a single dose of PCV13 alongside other outstanding primary vaccinations, from 16 weeks and before the age of one year. If the infant schedule is commenced at/after 16 weeks of age, the dose of PCV13 should not be further delayed: the PCV13 dose can be given either alone or concomitantly with any of the other primary immunisations.

Guidance is provided in Vaccination of individuals with uncertain or incomplete immunisation - https://www.gov.uk/government/publications/vaccination-of-individuals-with-uncertain-or-incomplete-immunisation-status

PCV10, PCV15 and PCV 20

PCV13 is the pneumococcal vaccine currently recommended and in use in the UK routine childhood immunisation schedule. There are other PCV vaccines available which are in use in other countries and/or can be accessed privately in the UK. Individuals may present having previously received PCV10, PCV15 or PCV20. Both PCV15 and PCV20 contain all the serotypes included in PCV13, whereas PCV10 contains only 10 serotypes.

For the routine programme, the interval between doses of PCV vaccines (of any valency) is a minimum of 4 weeks.

There is more information about what to do if an individual has received a PCV10, PCV15 or PCV20 in the Infants and children vaccinated abroad section.

Infants who receive their other primary immunisations earlier than recommended

Infants who have a reason to start their immunisations early (from 6 weeks) should ideally not receive their PCV13 until 16 weeks of age. Although a dose given from 12 weeks of age counts as a valid dose and does not need to be repeated, the PGD does not permit vaccination before 16 weeks of age for the routine programme. If, for a valid reason, the third set of primary immunisations is being given early, the PCV13 dose can be given at the same appointment if, to do otherwise, risks the child not being vaccinated against pneumococcal disease or having their vaccination delayed. A PSD or prescription would be required.

Booster at one year of age

There is no change to the PCV schedule at one year of age. All children should be offered a PCV13 booster dose on or after their first birthday along with the other vaccines due at this age, irrespective of how many doses of PCV13 they received in the first year of life, and allowing a minimum interval of 4 weeks since any previous dose of PCV 13, PCV15 or PCV20 that they have received.

Children who start the immunisation schedule after their first birthday should be given a single PCV13 dose only, as has been previously recommended (with the exception of those who are asplenic, have splenic dysfunction or a complement disorder or are severely immunocompromised – see relevant section below).

Infants and children vaccinated abroad

Any infant who has received one or more doses of PCV10 in another country should be offered a dose of PCV13 (allowing for a 4 week interval where possible) from 16 weeks of age. This ensures that infants coming into the UK are offered protection against the same pneumococcal serotypes as infants vaccinated according to the UK national immunisation schedule.

Allowing a minimum 4 week interval will result in boosting of protection against the ten strains that are in both the PCV10 and PCV13 vaccines. However, if in the opinion of the healthcare professional allowing an interval may lead to further delays in protection against the additional 3 strains, the vaccine may be administered at any interval to bring the child up to date with the UK schedule as soon as possible.

These infants should also receive a PCV13 dose at one year of age (on or after their first birthday). However, if the primary dose of PCV13 is given late (within 4 weeks of the first birthday), then the one year dose should be delayed, to allow a 4-week interval between the two PCV13 doses.

If a dose of PCV10 has been administered after the first birthday, this should be discounted and a dose of PCV13 administered, allowing for a 4 week interval where possible (unless by doing so the child will have reached their second birthday without receiving a dose of PCV13).

Doses of PCV15 or PCV20 administered in the first year of life from 12 weeks of age and after the first birthday are effective and the child does not need any additional PCV13 doses. If a child in their second year of life has received at least one infant dose of PCV15 or PCV20 from 12 weeks of age, they should receive a booster dose of PCV13 at one year of age (on or after their first birthday) allowing a minimum 4- week interval between PCV doses. If they have received a dose of PCV15 or PCV20 after their first birthday, irrespective of any or no infant PCV doses, no further PCV is needed.

Note: PCV15 and PCV20 are licensed for use from 6 weeks of age. In 2023, the JCVI considered the use of PCV15 in the childhood schedule and initially agreed that the latest evidence indicated it could be used in a 1+1 schedule. However, PCV15 is currently not included in the UK national immunisation programme. PCV20 is expected to replace PPV23 in adults over 65 years and the at-risk programme in late 2025/early 2026.

Upper age limit for infant PCV

All unimmunised or partially immunised healthy children remain eligible for PCV13 up to their second birthday. Routine immunisation with PCV13 is not offered after the second birthday unless the individual is at increased risk of pneumococcal disease (see Green Book Pneumococcal chapter 25 (www.gov.uk/government/publications/pneumococcal-the-green-book-chapter-25) for risk groups).

Infants born prematurely

Additional doses of PCV13 are not recommended for premature infants unless they are asplenic, have splenic dysfunction or are severely immunosuppressed. Premature infants should follow the national schedule recommendations according to their date of birth as outlined above.

Infants and children in clinical risk groups

The schedule for infant and booster doses of pneumococcal vaccine may differ for some children - with specified underlying medical conditions. In addition, vaccine is offered after the second year of life to children (and adults) in certain clinical risk groups. These individuals may require additional pneumococcal vaccination depending on their age at presentation/diagnosis, vaccination status and underlying condition. These recommendations are set out in the Green Book Pneumococcal chapter.

Children aged two years and older who have one of the medical conditions listed in the paragraph above should follow the recommendations for PCV13 and PPV23 in the Green Book Pneumococcal chapter.

Prophylactic paracetamol

Prophylactic paracetamol is currently recommended when the MenB vaccine (Bexsero) is given with the other primary immunisations at 8 weeks and 12 weeks. There is no recommendation to give prophylactic paracetamol routinely at 16 weeks when PCV13 is given with DTaP/IPV/Hib/HepB. However, no action needs to be taken if paracetamol is given prophylactically in error.

Paracetamol or ibuprofen can also be given to treat a fever or other symptoms following vaccination with PCV13 or any other vaccination if required. If an infant still has a fever 48 hours after vaccination, or if parents are concerned about their infant's health at any time following vaccination, advice should be sought from a GP or out-of-hours service.

Infants given the incorrect schedule

Infants inadvertently given first dose of PCV13 at 12 weeks

From 1 July 2025, if an infant is erroneously offered their first dose of PCV13 with their second set of primary immunisations at age 12 weeks, they do not need to receive any additional PCV dose until their routine PCV13 booster at one year of age. A dose of PCV13 administered from 12 weeks is effective.

If the child is still in the GP surgery and they have not been offered their second dose of MenB vaccine at the second visit at 12 weeks, this should be offered now as MenB vaccine can be given at the same time as PCV13 where necessary.

If they have already left the surgery, before the error is realised the vaccinator should ensure

that the child is offered their second dose of MenB vaccine at their 16 week appointment.

Infants given PCV13 before 12 weeks

Infants who are inadvertently given one or more doses of PCV13 before 12 weeks of age should be offered a further dose of PCV13 at their third visit which should be scheduled at 16 weeks.

Pneumococcal Polysaccharide Vaccine (PPV) given in error instead of Pneumococcal Conjugate Vaccine (PCV)

If PPV23 is inadvertently given to an infant in error where PCV13 should have been given, PCV13 should be given as soon possible after the error is realised. There is no need to observe any particular interval between the two vaccine doses in a child under two years of age.

The Public Health Agency would like to acknowledge the UK Health Security Agency (UKHSA) for kind permission to adapt their materials.

Useful resources

1. UKHSA Changes to routine childhood immunisation programme: 2025 and 2026 - https://www.gov.uk/government/publications/changes-to-routine-childhood-immunisation-programme-2025-and-2026
2. Goldblatt D, Southern J, Andrews N et al. Pneumococcal conjugate vaccine 13 delivered as one primary and one booster dose (1 + 1) compared with two primary doses and a booster (2 + 1) in UK infants: a multicentre, parallel group randomised controlled trial. The Lancet Infectious Diseases, February 2018; 18(2): 171-179.
3. Prevenar 13 suspension for injection - Summary of Product Characteristics (SmPC)- https://www.medicines.org.uk/emc/product/453/smpc
4. Pneumococcal: the green book, chapter 25 - https://www.gov.uk/government/publications/pneumococcal-the-green-book-chapter-25
5. Vaccination of individuals with uncertain or incomplete immunisation - https://www.gov.uk/government/publications/vaccination-of-individuals-with-uncertain-or-incomplete-immunisation-status
6. HSS Policy letter - https://www.health-ni.gov.uk/sites/default/files/2025-05/doh-hss-md-15-2025.pdf

For more information, see https://www.publichealth.hscni.net/services-and-teams/public-health-services/health-protection/vaccination-and-immunisation

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