UK Health Security Agency

Vaccination of individuals with uncertain or incomplete immunisation status

Supporting guidance

August 2026

Contents

Executive Summary

This ‘Vaccination of individuals with uncertain or incomplete immunisation status supporting guidance’ has been developed to support vaccinators and those providing immunisation advice to correctly identify any outstanding vaccinations required in order to protect individuals from disease.

It has been designed to assist users of the vaccination of individuals with uncertain or incomplete immunisation status algorithm by describing the general principles of vaccination and rationale behind the catch-up process. It seeks to provide a step-by-step guide to the considerations required to ensure that the individual is vaccinated correctly and in line with the algorithm.

Please note that the vaccination of individuals with uncertain or incomplete immunisation status algorithm is updated regularly when changes are made to the UK routine immunisation programmes. This guidance gives an overview of the considerations and principles for managing an individual with an incomplete immunisation history rather than a specific overview of the vaccines an individual may require. As these principles and considerations generally do not change, this guidance may not require updating with the same frequency as the algorithm. Vaccinators and those providing immunisation advice should always ensure they are using the most recent version of the algorithm available on the GOV.UK website.

Introduction

The overall aim of the routine immunisation schedule is to provide protection against vaccine-preventable diseases.

The childhood immunisation schedule has been designed to provide early protection against infections that are most dangerous for the very young. This is particularly important for diseases such as whooping cough, rotavirus and those caused by pneumococcal, Hib and meningococcal infections. Providing subsequent booster doses as scheduled should ensure continued protection. Further vaccinations are offered throughout the life course to provide ongoing protection against infections, or when eligible individuals reach an age where they can derive most benefit (such as because of an increased individual risk) or where the programme will provide optimal control of that disease for the whole population.

Recommendations for the age at which vaccines should be administered are informed by the age-specific risk for a disease, the risk of disease complications, the ability to respond to the vaccine and the impact on spread in the population. The schedule should therefore be followed as closely as possible.

Every effort should be made to ensure that all children and adults are immunised, even if they are older than the routine scheduled age, and no opportunity to immunise should be missed. However, catching up individuals with some vaccines after a certain age is not necessary or advised, so knowing which vaccine(s) to administer to the individual and when can be difficult to determine. The type of vaccine and number of doses recommended depends on the age of the individual as some vaccines are not indicated after a certain age. In most instances, this is because the ability to benefit from vaccination is reduced because of lower risk or lower effectiveness. Another reason may be the association with an increase in adverse events (e.g. rotavirus), causing the potential risk to outweigh the benefits of vaccination after a certain age.

The aim of this guidance is to support users with how to use and understand the rationale behind the vaccination of individuals with uncertain or incomplete immunisation algorithm. This guidance also aims to aid the user with identifying some of the wider considerations necessary when reviewing a vaccination history and determining any outstanding vaccinations.

All vaccinators should undertake comprehensive foundation immunisation training and subsequently receive regular updates, supervision and support to ensure that they achieve and maintain the required competencies and knowledge to perform their role safely and effectively. The UKHSA provides immunisation training standards for healthcare practitioners which outlines the minimum standards required for immunisation training and the core curriculum which should be covered in training. Training should include an understanding of immunology and the different vaccines and how they work. Knowledge and skills should be assessed in practice using the competency framework which accompanies the minimum standards.

The vaccination of individuals with uncertain or incomplete immunisation algorithm focuses on the UK complete routine immunisation schedule. Some individuals may be eligible for additional vaccines due to an underlying medical condition or circumstances that put them at increased risk of contracting a vaccine preventable disease or of complications from that disease. In addition to the vaccines identified through use of the algorithm, individuals with underlying medical conditions should also be vaccinated in accordance with the recommendations in the Green Book chapter 7 and the disease specific chapters.

Please note that travel vaccines and other vaccinations outside of the UK routine immunisation schedule (e.g. vaccines required following occupational health risk assessments or because of an underlying medical condition or lifestyle risk), are not covered by this algorithm. However, the individual's previous routine vaccination history should still be reviewed at appointments where these vaccines are given and where appropriate, arrangements made to catch-up as required.

Healthcare practitioner resources alignment with the UKHSA Immunisation Equity Strategy

UKHSA immunisation healthcare practitioner resources are designed to uphold and actively advance the principles set out in the UKHSA Immunisation Equity Strategy 2025–2030, supporting all individuals – regardless of background, circumstances, or barriers to access-to benefit equitably from vaccination.

In line with the Strategy's emphasis on addressing structural, practical, and social barriers to vaccination, UKHSA healthcare practitioner resources are provided in accessible digital formats, including HTML, with PDF versions also available where possible. This ensures compatibility with a wide range of devices, assistive technologies, and user needs.

To support equitable access to vaccination information, patient-facing leaflets are available in many different formats (both paper versions and online), including in multiple languages, Easy Read formats, Braille, British Sign Language (BSL) and audio. All healthcare practitioners with a role in immunisation are encouraged to familiarise themselves with the full range of available resources and to select those that are most appropriate for the individuals or communities they are supporting.

UKHSA Immunisation healthcare practitioner training materials are developed to support fairness and accessibility for all learners, supporting the workforce to deliver equitable, high-quality immunisation services. The UKHSA immunisation team remains committed to reviewing and enhancing our materials to reflect evolving evidence, community needs, and national guidance.

Health equity and incomplete immunisation status

The 2025 Health Equity Audit for the National Immunisation Programme provides strong evidence that immunisation inequities in England persist and are worsening. Specifically, vaccine uptake is known to:

- reduce as socioeconomic deprivation increases
- be lower within certain ethnic minority groups, notably Black ethnic groups
- be lower among children and young people with intellectual or learning disabilities compared to those without, across a number of immunisation programmes
- vary regionally, with London having consistently lower uptake than other areas of England

Inclusion health groups

There are limited data available to draw firm conclusions on immunisation equity across at-risk and inclusion health groups. However, we know that:

- there are high catch-up vaccination needs among migrants, including people seeking asylum and refugees (particularly for diphtheria, polio and measles among those aged 10 years and over)
- hepatitis B data suggest that uptake of the vaccination is low among female sex workers and people who inject drugs, two groups who are more likely to be exposed to the virus than the general population
- vaccine coverage in people in prison is lower than in the general population

These populations are more likely than the general population to present with incomplete immunisation history.

1.0 Immunisation schedules, naming convention, the importance of timing and terminology

1.1 Naming convention (nomenclature) and why it should be used

The majority of immunisation resources use nomenclature (e.g. DTaP/IPV/Hib/HepB) when referring to vaccines, rather than brand names (e.g. Infanrix Hexa) or the number of components of the vaccine (e.g. 6 in 1).

When reviewing an individual's vaccination history, it is important the healthcare professional identifies which diseases the individual has been vaccinated against (that is, which antigens they have received). There are vaccines used abroad which may not be used in the UK or they may have a different brand name to that used in the UK (such as Fluenz and FluMist which are both the same live attenuated influenza vaccine (LAIV), made by the same manufacturer, but which are given different brand names in different countries), or the combination of diseases protected against are different (e.g. MMR (measles, mumps and rubella vaccine) or MR (measles and rubella vaccine)). This means it is important that the disease vaccinated against is identified, rather than only considering the vaccine used.

Terms such as 'hexavalent' or '6-in-1' can also cause confusion as this simply states that the vaccine protects against six different diseases (that is, the vaccine contains 6 different antigen-types) but does not state which ones. For example, according to the WHO vaccination schedule by country dashboard, India uses a pentavalent (5-in-1) vaccine which protects against diphtheria, tetanus, whole-cell pertussis, haemophilus influenzae type b (Hib) and hepatitis B (DTwP/Hib/HepB), whereas Aruba also uses a pentavalent (5-in-1) vaccine, but the vaccine they use protects against diphtheria, tetanus, acellular pertussis, Hib and inactivated polio (DTaP/Hib/IPV).

When looking at the nomenclature, vaccinators may see that an individual has received a pertussis-containing vaccine with the nomenclature 'wP'. 'wP' refers to whole-cell pertussis. Acellular pertussis-containing vaccines are routinely used in the UK and are described by the nomenclature 'aP'. Where an individual has received a whole-cell pertussis-containing vaccine, this can be counted as a valid pertussis dose.

Some vaccines also contain different doses of diphtheria antigen, depending on whether these are priming or booster doses (see section 1.3). A diphtheria-containing vaccine which contains a higher dose of diphtheria antigen will use an uppercase 'D' and a vaccine containing a lower dose of diphtheria antigen will use a lowercase 'd' to differentiate the antigen content.

Appendix 1 contains a list of common vaccinations, their abbreviations and the disease(s) they protect against (that is, the antigens that they contain).

Appendix 2 details common diphtheria-containing vaccines and whether they contain high or low dose diphtheria.

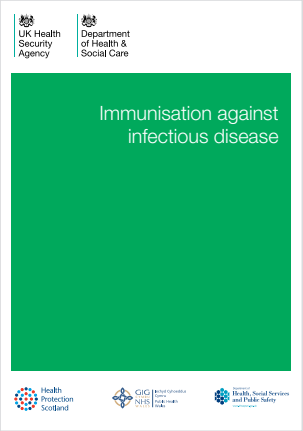
1.2 The importance of timing in vaccination

The UK vaccination schedule is designed to provide optimal protection at times when individuals are most vulnerable. The timing of each vaccine is carefully considered in relation to the individual's age, vulnerability to disease and when booster doses will be administered.

Vaccinations should not be given before the scheduled age (unless there is a clear clinical indication for this, such as travel to an endemic country). In these instances, the healthcare professional should check the guidance in the relevant chapter in the Green Book as although early doses may be given in some circumstances, these may need to be discounted (e.g. measles-containing vaccine given before 1 year of age).

Administering the first set of primary immunisations before 6 weeks of age is not recommended as it may result in a sub-optimal response to the vaccine. Any primary immunisations administered prior to 6 weeks of age should be discounted.

Different vaccines have different minimum and upper age limits that healthcare professionals need to be aware of when assessing an immunisation history and planning an individualised schedule. Upper age limits are most often set because epidemiological evidence indicates that the risk of acquiring the disease and/or of becoming severely affected by that disease is substantially reduced beyond that age and the individual therefore no longer requires the protection the vaccine offers, or the population benefit achieved from vaccinating individuals at older ages does not meet the cost effectiveness thresholds for the vaccine to be recommended by the Joint Committee on Vaccination and Immunisation (JCVI).



The schedule recommended by the JCVI incorporates the minimum intervals that should be observed between subsequent doses of the same vaccine. Whilst longer intervals will usually lead to a more pronounced response to a subsequent dose, giving doses at the minimum recommended intervals will mean the individual is protected earlier. However, as immunological memory from priming dose(s) is likely to be maintained in healthy individuals, where any course of immunisation is interrupted, there is normally no need to start the course again – it should simply be resumed and completed as soon as possible. Where vaccination was commenced some time previously however, the product received, number of doses recommended or the eligibility may have changed, and so the relevant Green Book chapter should therefore be consulted.

1.2.1 Specific vaccine considerations

The following is a brief overview of different vaccines and considerations regarding timing, but relevant Green Book chapters should be consulted for further information. There may also be specific considerations required for individuals in clinical risk groups. This is discussed in more detail in section 3.4 and Immunisation of individuals with underlying medical conditions: the green book, chapter 7 – GOV.UK.

Rotavirus: due to the risk of intussusception, there is an upper age limit for giving the rotavirus vaccine. Individuals who have not received their first dose of rotavirus vaccine before the age of 15 weeks should not be offered it. The second dose should not be given after 24 weeks of age.

Rotavirus: the green book, chapter 27b – GOV.UK

MenB: MenB vaccine is not routinely offered to children from the age of 2 years. This is because the risk of Meningococcal B disease is greatest in children under 2 years of age. This may differ for children in a clinical risk group (see section 3.4 of this guidance and the Immunisation of individuals with underlying medical conditions: the green book, chapter 7 – GOV.UK).

Meningococcal: the green book, chapter 22 – GOV.UK

Pneumococcal: the first dose of Pneumococcal Conjugate Vaccine (PCV13) is given at 16 weeks of age. The first dose should not be given before 12 weeks of age. A dose given before 12 weeks of age would not be classed as a valid dose and so any dose given under the age of 12 weeks would need to be discounted and repeated. The risk of disease is greatest in children under the age of 2 years, and this vaccine is therefore not routinely indicated in children aged 2 years or older. Please note, this may differ for individuals in a clinical risk group. Individuals at-risk (including children) may require further vaccination against additional pneumococcal strains and so the Green Book chapter and Information for Healthcare Practitioners document (link below) should be consulted in this situation. Pneumococcal vaccination is routinely indicated again from age 65 years.

Pneumococcal: the green book, chapter 25 – GOV.UK

Pneumococcal vaccination for older adults and for individuals in a clinical risk group: Information for healthcare practitioners – GOV.UK

MMR/MMRV: Administering a measles-containing vaccine under the age of 1 can result in a sub-optimal response (due to the possibility of maternal antibodies still being present in the infant's circulation which could neutralise the vaccine viruses). Therefore, any doses of measles-containing vaccine administered prior to 12 months of age should be discounted. In addition to this, from 01 January 2026, the type of measles-containing vaccine used in the UK changed to include varicella. The Measles, Mumps, Rubella and Varicella (MMRV) vaccine is offered routinely at one year and 18 months of age for children born on or after 01 January 2025. Children born between 01 January 2020 and 31 December 2024 are also eligible for one or two doses of MMRV, depending on their date of birth. Therefore, if an individual has received any previous doses of MMR or MMRV vaccine, healthcare professionals must check when they were administered to ensure that they align with the UK national immunisation schedule and that they have received the correct antigens for their age. For example, a child moving from overseas may have received two valid doses of MMR vaccine, but they may also be eligible for a further dose(s) of MMRV vaccine. These should be offered as per the schedule for their date of birth. For further support in determining which measles-containing vaccine an individual may require, please refer to Table 2 in the MMRV healthcare professionals guidance.

Measles: the green book, chapter 21 – GOV.UK

Mumps: the green book, chapter 23 – GOV.UK

Rubella: the green book, chapter 28 – GOV.UK

Varicella: the green book, chapter 34 – GOV.UK

***Haemophilus influenzae* type b (Hib):** children only require one dose of any Hib-containing vaccine over the age of 12 months, and children from the age of 10 years do not require a Hib-containing vaccine. This is because the risk of Hib disease and transmission is greatest in children under the age of 10 years old.

Haemophilus influenzae type b (Hib): the green book, chapter 16 – GOV.UK

Childhood schedule changes from 1 July 2025: information for healthcare practitioners – GOV.UK

Diphtheria: all children under the age of 10 years old require three primary high-dose diphtheria vaccines (see Appendix 2). From the age of 10 years, they no longer require high-dose diphtheria vaccines for any priming or booster doses. Low-dose diphtheria vaccines (i.e. Td/IPV) should be used in individuals from the age of 10 because they provide a satisfactory immune response at this age and the risk of reactions is minimised.

Diphtheria: the green book, chapter 15 – GOV.UK

Hepatitis B: HepB vaccine is not routinely offered to individuals from the age of ten years old. When using the algorithm to catch up children, it is always advisable to consider whether the child was born to a mother living with Hepatitis B infection or is living in a household with other people living with Hepatitis B infection. In some cases, they may require further vaccines, and the Green Book Hepatitis B chapter should be consulted. In some countries, HepB vaccine is given routinely at birth. As there is evidence to show that birth doses are effective at providing protection at this age, this can be classed as a valid dose.

Hepatitis B: the green book, chapter 18 – GOV.UK

Pertussis: Pertussis vaccine is not offered to individuals from the age of ten years as part of the routine programme. The exception to this is for pregnant women. This is because vaccinating against pertussis in pregnancy offers the best protection against severe pertussis disease in young babies

Pertussis: the green book, chapter 24 – GOV.UK

Inactivated Polio Vaccine (IPV): any doses of oral polio vaccine (OPV) given in another country since April 2016 should be discounted (see Appendix 3). Many countries have a mixed OPV and IPV schedule and so if sufficient IPV doses have been received for their age, then no additional IPV doses are required.

Polio: the green book, chapter 26 – GOV.UK

See Appendix 3 for more detail.

1.3 Terminology and determining the order of vaccinations received: primary immunisation and booster doses

A primary course of vaccines refers to the initial course of vaccines people receive if they have never been immunised against that disease. It is important that people receive adequate 'priming' doses before they are given any boosters. When booster doses are indicated, this is to provide longer term protection following primary immunisation.

An example of a primary course of vaccines and subsequent boosters in the UK is the diphtheria-containing vaccine (DTaP/IPV/Hib/HepB) administered to children at 8 weeks, 12 weeks and 16 weeks with subsequent booster doses at 18 months (DTaP/IPV/Hib/HepB), 3 years 4 months (dTaP/IPV) and around 14 years of age (Td/IPV).

If a child presents at any age under the age of 10 years old, and they have not received three doses of DTaP/IPV/Hib/HepB, they should be caught up with this vaccine. This is important both so that they receive three doses of high-dose diphtheria and also so that they receive the protection offered by the other five antigens contained in this vaccine.

In situations where a child under the age of 10 has not completed their primary course of DTaP/IPV/Hib/HepB and they have been given a dTaP/IPV booster, the booster should be discounted. The primary course of DTaP/IPV/Hib/HepB, given at the appropriate intervals, should be completed before a further dTaP/IPV is administered. This is to ensure that a sufficient immune response has been generated.

2.0 General Principles

The algorithm states four general principles which vaccinators should consider when assessing an immunisation history and planning an immunisation schedule.

Principle 1: Unless there is a documented or reliable verbal vaccine history, individuals should be assumed to be unimmunised and a full course of immunisations planned

Not all individuals presenting for vaccination will have written documentation about the vaccines they have received previously. When assessing a vaccination history, in the absence of written documentation, a reliable verbal history is acceptable. The vaccinator will need to use their clinical judgement to assess the reliability of the individual's recollection of which vaccines they (or their children) have received.

In situations where the vaccinator is unable to determine a vaccine history, the individual should be assumed to be unimmunised and vaccinate accordingly. This is because it is preferable to potentially receive additional vaccination than for the individual to remain susceptible to disease. While there can be increased reactogenicity when receiving additional doses of some vaccines, this is usually outweighed by the risk of leaving individuals unprotected and vulnerable to disease. The exception to this would be the BCG vaccine. If there is any doubt as to whether a patient has previously received a BCG vaccination, specialist advice should be sought.

Principle 2: Individuals coming to the UK part way through their immunisation schedule should be transferred onto the UK schedule and immunised as appropriate for age

Immunisation schedules differ from country to country. The immunisation schedule for each country reflects the epidemiology and risk of disease for that specific area. The UK schedule is designed to protect individuals from diseases they are at risk of based on the UK epidemiology, and so individuals from abroad should be assessed and transferred onto the UK schedule as soon as possible. This ensures they are protected against diseases they may be vulnerable to in the UK.

It is important to be able to discuss the rationale and importance of this with individuals who have moved to the UK as they may have concerns about not receiving the vaccinations they would have had in the previous country or finishing a course they may have started. They should be reassured that the vaccines being offered will provide the best protection whilst they are living in the UK.

People who move from abroad may have questions about immunisations if they frequently travel back to their home country. In these situations, it is important to offer vaccinations which will bring the individual into line with the UK schedule. Any specific vaccines they may require for travel back to their country of origin or elsewhere should be treated as a travel vaccine. More information about travel vaccines can be found at NaTHNaC – Home (travelhealthpro.org.uk)

Principle 3: If the primary course has been started but not completed, resume the course – no need to repeat doses or restart the course

Evidence shows vaccination courses completed at the correct age, with the correct intervals, give the best protection. However, sometimes the course may be interrupted (for example if an individual does not attend for further doses). As immunological memory from priming dose(s) is likely to be maintained in healthy individuals, where any course of immunisation is interrupted, there is normally no need to start the course again – it should simply be resumed and completed as soon as possible. Where vaccination was commenced some time previously however, the product(s) now available, the number of doses recommended or the eligibility criteria may have changed, and the relevant Green Book chapter should therefore be consulted.

Principle 4: Plan a catch-up immunisation schedule with the minimum number of visits and within a minimum possible timescale – aim to protect individuals in shortest time possible

Planning a catch-up immunisation schedule within the minimum possible timescale allows individuals to receive prompt protection. This is especially important for those individuals who have an incomplete immunisation history as they are already missing immunisations they should have received and are therefore unprotected for their age. There is no upper limit on the number of vaccines which can be given at one time and so planning catch up with the least number of visits allows the vaccinator to maximise the opportunity to vaccinate and increases the likelihood the individual will receive all the vaccines they require. Where additional vaccinations are required outside of the routine schedule (e.g. BCG), the relevant Green Book chapters should also be consulted.

3.0 Identifying outstanding vaccinations using the algorithm and planning an individualised immunisation schedule

Using the algorithm to plan a catch-up schedule can be broken down into a three-step process, which is explained in more detail in this section. First, the vaccinator needs to establish a vaccine history to determine which vaccines the individual has already received and when. Then the vaccinator should identify which immunisations are missing, in order to plan an individualised schedule. This means that the full vaccination history of the individual (including dates received) should be obtained before progressing.

3.1 Establish the vaccine history

Before identifying outstanding vaccines and planning an immunisation schedule, the individual's vaccination history must be established. Not everyone presenting for vaccination will have missed all of their immunisations and so the vaccinator will need to ascertain which vaccinations they have received, and when they received them, to determine what is outstanding and what they need now. This does not have to be a written record – the vaccinator may accept a reliable verbal history.

If the individual was born in the UK, every effort should be made to obtain their immunisation records from their previous GP or Child Health Information Services. The child's personal health record (the Red Book) can also be used to establish a vaccine history. For individuals born abroad, obtaining a written immunisation history may be more difficult (for example, a family who have fled conflict). In these circumstances, if the individual is able to verbally relay their vaccination history, and the vaccinator is confident in its reliability, a written history is not required. Examples of written evidence of vaccination from abroad could be various health documents or vaccine passports.

3.1.1 Resources available

There are resources available to support vaccinators in establishing a vaccine history.

WHO Immunization Data portal – All Data

This portal shows current immunisation schedules for different countries across the world. It shows the vaccinations routinely scheduled in these countries across the life span. Whilst this is an extremely useful tool, it is worth remembering that this only shows the currently recommended vaccines in this country. Depending on the age of the individual, they may not have received the immunisations listed for that country (if the schedule has changed since they received their immunisations).

The UKHSA complete routine immunisation schedule, The UKHSA complete routine immunisation schedule, which can be downloaded in over 30 languages, can be used to aide conversations with in individuals in whom English may not be their first language

If a reliable vaccine history cannot be established, the individual should be assumed to be unimmunised (see section 2.0), and their immunisation schedule should be planned accordingly. This is because the risk of leaving someone unimmunised and unprotected against disease, outweighs the risk of any potential side effects from having additional vaccines (with the exception of BCG vaccine).

3.2 Identify missing vaccinations

Once a vaccine history has been established, the vaccinator must identify any missing immunisations. To do this, they must choose the correct column on the algorithm for the individual's age.

The algorithm is grouped by age for individuals from birth to older age. This reflects the recommended vaccines on the national immunisation schedule which is informed by the immune response of individuals at different ages, the risk of disease at different ages and the upper (and lower) age limit for different vaccines.

The earliest age group shown is eight weeks old and reflects the beginning of the routine immunisation programme. Vaccination before 8 weeks of age is only indicated in specific circumstances (for example babies on selective immunisation pathways because of increased risk e.g. HepB and BCG, or for travel purposes). Vaccination is not routinely offered in the UK before 8 weeks of age as infants' immune systems are immature, meaning they may be less responsive to vaccines. There is also a possibility that residual maternal antibodies in the infant's circulation may lower the immune response to any vaccine.

Note that the column 'From tenth birthday onwards' covers **all** children aged 10 years and older, adolescents and adults of **all** ages.

Once the correct column has been identified for the individual's age, the vaccinator can compare their vaccine history to the algorithm to determine which vaccines may be missing.

Each column identifies the vaccines that an individual would need for their age, with appropriate intervals. They also contain footnotes which expand on certain immunisations to explain them further, and lead on to explain booster doses, **so the column should be read in its entirety before the first vaccine is given**.

The vaccinator should use the immunisation history of the individual to determine whether they have already received any of the vaccines in the relevant column. It is important that the vaccinator determines if these are valid doses. In order to be classed as a valid dose, the vaccines must have been given at an appropriate age, and where relevant, with appropriate intervals. For example, a child may have received a measles containing vaccine but if this was given before one year of age, this would need to be discounted. See information on vaccine ages and eligibility in section 1.2 for more information. There are tools available such as online age calculators which can support professionals in determining the age at which the individual was when a vaccine was administered, and also the time interval which occurred between doses which have been administered. However, whilst these provide useful information about ages and intervals, they do not provide information on vaccines.

If the individual has received a **valid** dose of any of the vaccines contained in the box, they do not require this vaccine again. It is important to remember the principle that if a primary course has been started, but not completed, the course can be resumed – it does not need to be restarted. Any dose that has already been given and considered valid can be counted and then a schedule should be planned for any remaining vaccines in the column that have not yet been given.

Practically speaking, there are different ways to use the algorithm to identify missing immunisations. Some people prefer to write out all of the immunisations in the column, with the intervals, and some people prefer to use paper copies of the document (often laminating them). When using physical copies, please always ensure that the most up-to-date version of the document is being used. Using an out-of-date version may result in individuals receiving vaccines which are not currently recommended or not receiving vaccines that are.

3.3 Plan the schedule

The algorithm explains that the schedule should be planned with the minimum number of visits and within a minimum possible timescale. The aim of this is to protect individuals in the shortest time possible, which is especially important for those people who are missing immunisations as they will be vulnerable to that disease.

Some individuals or parents/carers may be concerned about receiving multiple immunisations at one visit. Whilst these concerns are understandable, these individuals should be reassured by confident and knowledgeable healthcare professionals that the aim of immunisation is to provide protection against harmful diseases at the very earliest opportunity before they become at risk from them. There are no harmful effects from administering multiple vaccines in one session and there is no evidence to support any concerns about overloading the immune system. Individuals are naturally exposed to a huge number of bacteria and viruses every day and responding to vaccinations uses only a small proportion of their immune system. Additionally, administering multiple vaccines in one session is a routine occurrence in the UK and in most countries around the world with no evidence of harmful effects. By vaccinating individuals at the earliest opportunity, vaccinators are also reducing the risk that an individual will remain unprotected if they do not return.

There may also be occasions whereby an individual is missing protection against a specific disease, but in order to provide this antigen, they require a vaccine which contains antigens they are already adequately protected against. An example of this would be an individual who has received an adequate number of DTaP/IPV/Hib/HepB vaccines for their age, but who now requires a Hib vaccine. In this situation, the hexavalent vaccine would be the correct vaccine to use even though they do not require the other antigens contained in that vaccine because there is no monovalent Hib vaccine available.

3.4 Additional considerations

Depending on the individual and the setting, there may be additional factors the vaccinator needs to consider.

3.4.1 Underlying medical conditions and selective immunisation programmes

Individuals with underlying medical conditions, who are pregnant, or in certain risk groups (e.g. children born to a mother living with hepatitis B infection or parents/grandparents from a country with high TB incidence), may be eligible for further vaccinations in addition to the vaccines on the routine immunisation schedule. Although not included in the algorithm (as this is intended for bringing individuals up to date with the routine schedule), it is important to consider whether any additional vaccinations are required.

The 'vaccination of individuals with uncertain or incomplete immunisation status algorithm' should be used to assess individuals for their routine immunisations initially. Consideration should then also be given to any specific medical conditions or situations where additional vaccination may be required. The relevant Green Book chapters should be consulted in these circumstances.

3.4.2 Residential, detained and other specialist settings

Individuals in a residential setting (including those who are detained) are entitled to the same vaccinations as they would receive if they were living in other communities. Their vaccination status should therefore ideally be assessed on their entry into the setting, and they should be caught up with any vaccinations they are missing.

Assessing and offering vaccination to individuals in a residential setting provides an opportunity to vaccinate someone who is missing routine immunisations and may not otherwise receive them. It is therefore important to use this opportunity to discuss vaccination so that the individual receives the vaccinations they need. This in turn can reduce the risk of vaccine preventable disease transmission and outbreaks within that setting.

The 'vaccination of individuals with uncertain or incomplete immunisation status algorithm' should be used to assess individuals to ensure they are up to date for their routine immunisations. Following this, it is then important that each setting carries out their own risk assessment as additional vaccines may be required for their population.

In accordance with the Hepatitis B Green Book chapter, Hepatitis B vaccination is recommended for all people resident in prisons and places of detention and all people newly entering custodial institutions in the UK.

Depending on a setting's risk assessment, it may be appropriate to also consider vaccinating individuals against Hepatitis A. Hepatitis A immunisation is recommended for people who inject drugs and can be given at the same time as hepatitis B vaccine, as separate or combined vaccines. Consideration should be given to maximising opportunities for vaccination in drug services, prisons and via outreach services in homeless shelters, hostels and encampments.

3.4.3 Specially commissioned vaccination services

Some vaccines are offered to a limited cohort of highest risk people (e.g. GBMSM) and this may require attendance at a specific clinic (such as a sexual health clinic) where staff are contracted to provide that service. Where staff are not contracted to provide the full range of vaccines required, they should signpost to/facilitate the individuals attendance at a service that is able to offer them the vaccines that they need.

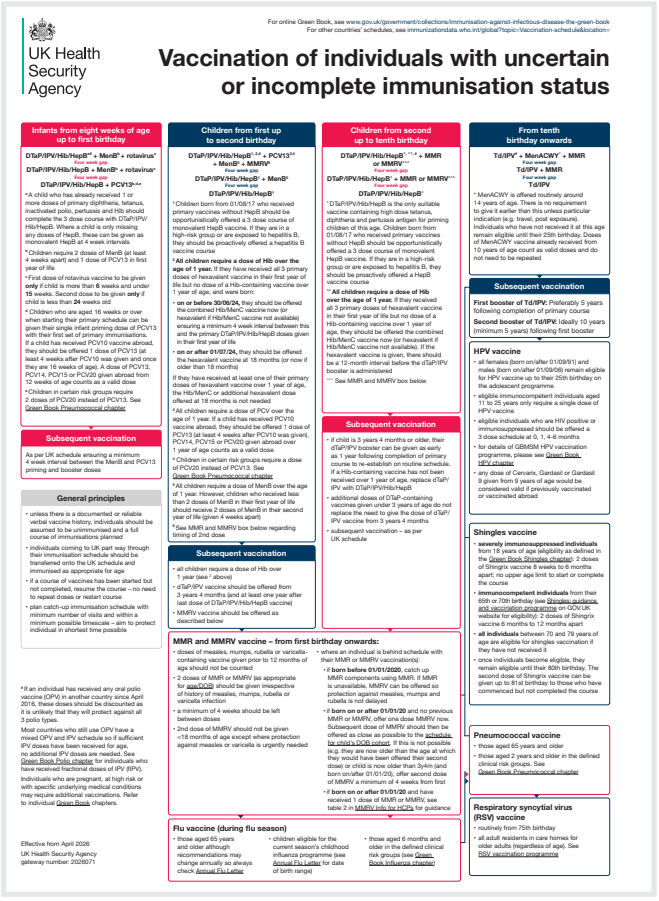
3.5 Example scenarios to demonstrate algorithm use

The following examples show how to apply the algorithm to different scenarios. Vaccinators will be able to see how to work through an immunisation history and apply relevant guidance to determine an appropriate immunisation schedule for an individual.

The examples below outline which vaccinations an individual requires as part of the routine vaccination programme. There will be circumstances where individuals may be due additional vaccines outside of the routine programme as they fall into an at-risk category (e.g. flu or pneumococcal).

Healthcare professionals should always read the algorithm in full to ensure no vaccinations are missed. They should also be aware of the information within the Green Book relating to individuals with underlying medical conditions.

Please note that these examples are based on the UK routine immunisation schedule and vaccination of individuals with uncertain or incomplete immunisation status algorithm in January 2026. Although the principles remain unchanged, immunisers should ensure they always use the most up to date resources.



UK Health Security Agency

For online Green Book, see www.gov.uk/government/collections/immunisation-against-infectious-disease-the-green-book
For other countries' schedules, see immunizationdata.who.int/global?topic=Vaccination-schedule&location=

Vaccination of individuals with uncertain or incomplete immunisation status

Infants from eight weeks of age up to first birthday

DTaP/IPV/Hib/HepB[1,2] + MenB[3] + rotavirus[4]
Four week gap
DTaP/IPV/Hib/HepB + MenB[3] + rotavirus[4]
Four week gap
DTaP/IPV/Hib/HepB + PCV13[5,6,7]

*A child who has already received 1 or more doses of primary diphtheria, tetanus, inactivated polio, pertussis and Hib should complete the 3 dose course with DTaP/IPV/Hib/HepB. Where a child is only missing any doses of HepB, these can be given as monovalent HepB at 4 week intervals

[3]Children require 2 doses of MenB (at least 4 weeks apart) and 1 dose of PCV13 in first year of life

[4]First dose of rotavirus vaccine to be given **only** if child is more than **6** weeks and under **15** weeks. Second dose to be given **only** if child is less than **24** weeks old

[5] Children who are aged 16 weeks or over when starting their primary schedule can be given their single infant priming dose of PCV13 with their first set of primary immunisations. If a child has received PCV10 vaccine abroad, they should be offered 1 dose of PCV13 (at least 4 weeks after PCV10 was given and once they are 16 weeks of age). A dose of PCV13, PCV14, PCV15 or PCV20 given abroad from 12 weeks of age counts as a valid dose

[6]Children in certain risk groups require 2 doses of PCV20 instead of PCV13. See Green Book Pneumococcal chapter

Subsequent vaccination
As per UK schedule ensuring a minimum 4 week interval between the MenB and PCV13 priming and booster doses

General principles
- unless there is a documented or reliable verbal vaccine history, individuals should be assumed to be unimmunised and a full course of immunisations planned
- individuals coming to UK part way through their immunisation schedule should be transferred onto the UK schedule and immunised as appropriate for age
- if a course of vaccines has been started but not completed, resume the course – no need to repeat doses or restart course
- plan catch-up immunisation schedule with minimum number of visits and within a minimum possible timescale – aim to protect individual in shortest time possible

Children from first up to second birthday

DTaP/IPV/Hib/HepB[1,2,8] + PCV13[5,6] + MenB[3] + MMR[9]
Four week gap
DTaP/IPV/Hib/HepB[1] + MenB[3]
Four week gap
DTaP/IPV/Hib/HepB[1]

[1]Children born from 01/08/17 who received primary vaccines without HepB should be opportunistically offered a 3 dose course of monovalent HepB vaccine. If they are in a high-risk group or are exposed to hepatitis B, they should be proactively offered a hepatitis B vaccine course

[8]**All children require a dose of Hib over the age of 1 year.** If they have received all 3 primary doses of hexavalent vaccine in their first year of life but no dose of a Hib-containing vaccine over 1 year of age, and were born:
- **on or before 30/06/24,** they should be offered the combined Hib/MenC vaccine now (or hexavalent if Hib/MenC vaccine not available) ensuring a minimum 4 week interval between this and the primary DTaP/IPV/Hib/HepB doses given in their first year of life
- **on or after 01/07/24,** they should be offered the hexavalent vaccine at 18 months (or now if older than 18 months)

If they have received at least one of their primary doses of hexavalent vaccine over 1 year of age, the Hib/MenC or additional hexavalent dose offered at 18 months is not needed

[9]All children require a dose of PCV over the age of 1 year. If a child has received PCV10 vaccine abroad, they should be offered 1 dose of PCV13 (at least 4 weeks after PCV10 was given), PCV14, PCV15 or PCV20 given abroad over 1 year of age counts as a valid dose

[5] Children in certain risk groups require a dose of PCV20 instead of PCV13. See Green Book Pneumococcal chapter

[3]All children require a dose of MenB over the age of 1 year. However, children who received less than 2 doses of MenB in their first year of life should receive 2 doses of MenB in their second year of life (given 4 weeks apart)

[9]See MMR and MMRV box below regarding timing of 2nd dose

Subsequent vaccination
- all children require a dose of Hib over 1 year (see [8] above)
- dTaP/IPV vaccine should be offered from 3 years 4 months (and at least one year after last dose of DTaP/IPV/Hib/HepB vaccine)
- MMRV vaccine should be offered as described below

Children from second up to tenth birthday

DTaP/IPV/Hib/HepB[1,10,8] + MMR or MMRV[9,11]
Four week gap
DTaP/IPV/Hib/HepB[1] + MMR or MMRV[9,11]
Four week gap
DTaP/IPV/Hib/HepB[1]

[1]DTaP/IPV/Hib/HepB is the only suitable vaccine containing high dose tetanus, diphtheria and pertussis antigen for priming children of this age. Children born from 01/08/17 who received primary vaccines without HepB should be opportunistically offered a 3 dose course of monovalent HepB vaccine. If they are in a high-risk group or are exposed to hepatitis B, they should be proactively offered a HepB vaccine course

[8] **All children require a dose of Hib over the age of 1 year.** If they received all 3 primary doses of hexavalent vaccine in their first year of life but no dose of a Hib-containing vaccine over 1 year of age, they should be offered the combined Hib/MenC vaccine now (or hexavalent if Hib/MenC vaccine not available). If the hexavalent vaccine is given, there should be a 12-month interval before the dTaP/IPV booster is administered

[9] [11] See MMR and MMRV box below

Subsequent vaccination
- if child is 3 years 4 months or older, their dTaP/IPV booster can be given as early as 1 year following completion of primary course to re-establish on routine schedule. If a Hib-containing vaccine has not been received over 1 year of age, replace dTaP/IPV with DTaP/IPV/Hib/HepB
- additional doses of DTaP-containing vaccines given under 3 years of age do not replace the need to give the dose of dTaP/IPV vaccine from 3 years 4 months
- subsequent vaccination – as per UK schedule

From tenth birthday onwards

Td/IPV[1] + MenACWY[1] + MMR
Four week gap
Td/IPV + MMR
Four week gap
Td/IPV

[1] MenACWY is offered routinely around 14 years of age. There is no requirement to give it earlier than this unless particular indication (e.g. travel, post exposure). Individuals who have not received it at this age remain eligible until their 25th birthday. Doses of MenACWY vaccine already received from 10 years of age count as valid doses and do not need to be repeated

Subsequent vaccination
First booster of Td/IPV: Preferably 5 years following completion of primary course
Second booster of Td/IPV: Ideally 10 years (minimum 5 years) following first booster

HPV vaccine
- all females (born on/after 01/09/91) and males (born on/after 01/09/06) remain eligible for HPV vaccine up to their 25th birthday on the adolescent programme
- eligible immunocompetent individuals aged 11 to 25 years only require a single dose of HPV vaccine
- eligible individuals who are HIV positive or immunosuppressed should be offered a 3 dose schedule at 0, 1, 4-6 months
- for details of GBMSM HPV vaccination programme, please see Green Book HPV chapter
- any dose of Cervarix, Gardasil or Gardasil 9 given from 9 years of age would be considered valid if previously vaccinated or vaccinated abroad

Shingles vaccine
- **severely immunosuppressed individuals** from 18 years of age (eligibility as defined in the Green Book Shingles chapter): 2 doses of Shingrix vaccine 8 weeks to 6 months apart; no upper age limit to start or complete the course
- **immunocompetent individuals** from their 65th or 70th birthday (see Shingles guidance and vaccination programme on GOV.UK website for eligibility): 2 doses of Shingrix vaccine 6 months to 12 months apart
- **all individuals** between 70 and 79 years of age are eligible for shingles vaccination if they have not received it
- once individuals become eligible, they remain eligible until their 80th birthday. The second dose of Shingrix vaccine can be given up to 81st birthday to those who have commenced but not completed the course

Pneumococcal vaccine
- those aged 65 years and older
- those aged 2 years and older in the defined clinical risk groups. See Green Book Pneumococcal chapter

Respiratory syncytial virus (RSV) vaccine
- routinely from 75th birthday
- all adult residents in care homes for older adults (regardless of age). See RSV vaccination programme

MMR and MMRV vaccine – from first birthday onwards:
- doses of measles, mumps, rubella or varicella-containing vaccine given prior to 12 months of age should not be counted
- 2 doses of MMR or MMRV (as appropriate for age/DOB) should be given irrespective of history of measles, mumps, rubella or varicella infection
- a minimum of 4 weeks should be left between doses
- 2nd dose of MMRV should not be given <18 months of age except where protection against measles or varicella is urgently needed
- where an individual is behind schedule with their MMR or MMRV vaccination(s):
- **if born before 01/01/2020**, catch up MMR components using MMR, if MMR is unavailable, MMRV can be offered so protection against measles, mumps and rubella is not delayed
- **if born on or after 01/01/20** and no previous MMR or MMRV, offer one dose MMRV now. Subsequent dose of MMRV should then be offered as close as possible to the schedule for child's DOB cohort. If this is not possible (e.g. they are now older than the age at which they would have been offered their second dose) or child is now older than 3y4m (and born on/after 01/01/20), offer second dose of MMRV a minimum of 4 weeks from first
- **if born on or after 01/01/20** and have received 1 dose of MMR or MMRV, see table 2 in MMRV Info for HCPs for guidance

Flu vaccine (during flu season)
- those aged 65 years and older although recommendations may change annually so always check Annual Flu Letter
- children eligible for the current season's childhood influenza programme (see Annual Flu Letter for date of birth range)
- those aged 6 months and older in the defined clinical risk groups (see Green Book Influenza chapter)

*If an individual has received any oral polio vaccine (OPV) in another country since April 2016, these doses should be discounted as it is unlikely that they will protect against all 3 polio types.

Most countries who still use OPV have a mixed OPV and IPV schedule so if sufficient IPV doses have been received for age, no additional IPV doses are needed. See Green Book Polio chapter for individuals who have received fractional doses of IPV (fIPV).

Individuals who are pregnant, at high risk or with specific underlying medical conditions may require additional vaccinations. Refer to individual Green Book chapters.

Effective from April 2026
UK Health Security Agency
gateway number: 2026071

Example 1

Scenario: Child aged 8 months old who, according to their Red Book, had their immunisations at 8 weeks old. The family then moved house, and they didn't attend for further immunisations.

Current age: 8 months and 2 days

Vaccine history: 8 weeks: Hexa + Rota + Bexsero

Step 1: Establish a vaccine history

The child's Red Book indicates that they attended for their 8-week immunisations. The vaccines were recorded using brand names and abbreviations (see section 1.1) and so the vaccinator must identify the antigens the child has received.

'Hexa': This abbreviation is commonly used to reference the hexavalent vaccine used in the UK's primary immunisation schedule. As we know this child received their immunisations in the UK, we can safely assume this refers to DTaP/IPV/Hib/HepB as this is the only available hexavalent vaccine in the UK.

'Rota': This refers to the rotavirus vaccine.

'Bexsero': This is the brand name for MenB vaccine.

Therefore, the vaccinator knows the child has received: DTaP/IPV/Hib/HepB + Rotavirus + MenB at 8 weeks.

Step 2: Identify missing immunisations

First, the vaccinator must choose the correct column for the child's age. In this case, as the child is 8 months old, the column 'Infants from eight weeks of age up to first birthday' should be used.

Then they can exclude the vaccines the child has already received to identify what is missing:

Infants from eight weeks of age up to first birthday

DTaP/IPV/Hib/HepB[a#] + MenB[b] + rotavirus[c]
Four week gap
DTaP/IPV/Hib/HepB + MenB[b] + rotavirus[c]
Four week gap
DTaP/IPV/Hib/HepB + PCV13[b,d,e]

[a] A child who has already received 1 or more doses of primary diphtheria, tetanus, inactivated polio, pertussis and Hib should complete the 3 dose course with DTaP/IPV/Hib/HepB. Where a child is only missing any doses of HepB, these can be given as monovalent HepB at 4 week intervals

[b] Children require 2 doses of MenB (at least 4 weeks apart) and 1 dose of PCV13 in first year of life

[c] First dose of rotavirus vaccine to be given **only** if child is more than **6** weeks and under **15** weeks. Second dose to be given **only** if child is less than **24** weeks old

[d] Children who are aged 16 weeks or over when starting their primary schedule can be given their single infant priming dose of PCV13 with their first set of primary immunisations. If a child has received PCV10 vaccine abroad, they should be offered 1 dose of PCV13 (at least 4 weeks after PCV10 was given and once they are 16 weeks of age). A dose of PCV13, PCV14, PCV15 or PCV20 given abroad from 12 weeks of age counts as a valid dose

[e] Children in certain risk groups require 2 doses of PCV20 instead of PCV13. See Green Book Pneumococcal chapter

Infants from eight weeks of age up to first birthday

~~**DTaP/IPV/Hib/HepB[a#] + MenB[b] + rotavirus[c]**~~
Four week gap
DTaP/IPV/Hib/HepB + MenB[b] + rotavirus[c]
Four week gap
DTaP/IPV/Hib/HepB + PCV13[b,d,e]

Step 3: Planning the schedule

As previously explained, the columns contain footnotes which are important to read. In this case, the footnote relating to rotavirus explains that the second dose of rotavirus vaccine can only be given if the child is under 24 weeks of age. As this child is over the upper age limit, this vaccine needs to be excluded from the schedule.

As the child is over 16 weeks of age, the dose of PCV13 can be given now with the first set of planned immunisations. It is important to note, as seen on the algorithm, that some children in certain risk groups require two doses of PCV20 instead of PCV13. It is therefore always important to check the medical history of the child (see Green Book Pneumococcal chapter for more information).

The child may also be eligible for a flu vaccine, if in a clinical risk group as defined in the Green Book.

Assuming the child is not in any risk groups, the following schedule should be offered:

DTaP/IPV/Hib/HepB + Men B + PCV13

4 week interval

DTaP/IPV/Hib/HepB

Example 2

Scenario: Child aged 13 years moved to the UK from abroad and has no vaccination history. Their parents think they probably took them for the vaccines when they were little, but they can't be sure. They are due to start school shortly.

Current age: 13 years of age

Vaccine history: None available

Step 1: Establish a vaccine history

As there is no reliable vaccine history, the vaccinator should adhere to the first general principle and assume this individual is unimmunised and plan a schedule accordingly.

Step 2: Identify missing immunisations

The final column (from tenth birthday onwards) should be used for this child.

From tenth birthday onwards

Td/IPV[#] + MenACWY[*] + MMR
Four week gap
Td/IPV + MMR
Four week gap
Td/IPV

* MenACWY is offered routinely around 14 years of age. There is no requirement to give it earlier than this unless particular indication (e.g. travel, post exposure). Individuals who have not received it at this age remain eligible until their 25th birthday. Doses of MenACWY vaccine already received from 10 years of age count as valid doses and do not need to be repeated

HPV vaccine

- all females (born on/after 01/09/91) and males (born on/after 01/09/06) remain eligible for HPV vaccine up to their 25th birthday on the adolescent programme
- eligible immunocompetent individuals aged 11 to 25 years only require a single dose of HPV vaccine
- eligible individuals who are HIV positive or immunosuppressed should be offered a 3 dose schedule at 0, 1, 4-6 months
- for details of GBMSM HPV vaccination programme, please see Green Book HPV chapter
- any dose of Cervarix, Gardasil or Gardasil 9 given from 9 years of age would be considered valid if previously vaccinated or vaccinated abroad

As the vaccinator must assume the child is completely unimmunised, they cannot exclude any vaccines in the column. However, in this example, it is important to consider that some of these vaccinations are normally administered in school settings. These include:

- MenACWY
- HPV
- Td/IPV
- Flu (if in a clinical risk group can receive this at GP)

Depending on the age of the child when they present and considering any specific circumstances (if they are likely to attend school or move out of area, etc.), it may be appropriate for the practice to either offer school aged vaccinations (particularly if the child is already past the age at which they would routinely be administered or there is a real risk the presenting child may go unimmunised), or wait for them to be administered by the School Aged Immunisation Service (SAIS). The vaccinator should conduct an individual assessment and determine the most suitable plan going forward.

In this example, as the child is currently enrolling in school (but not yet started), it would be reasonable for the practice to administer the HPV vaccine now, as the child is already of the age at which it would have been offered in school. However, they should be in school by the time MenACWY is required. The footnote to MenACWY also states the following:

'MenACWY is offered routinely around 14 years of age. There is no requirement to give it earlier than this unless particular indication (e.g. travel, post exposure)'

Although a dose of Td/IPV is offered in school (usually at 14-years of age), the practice should start the primary course of this vaccine immediately. The dose of Td/IPV offered in secondary school is a **booster**, whereas this child is behind with their **primary schedule**).

Continuing to follow the flow chart, depending on any clinical conditions, this individual may be eligible for an annual flu vaccine (if it is flu vaccination season), and pneumococcal vaccination if they are in a defined clinical risk group. Flu vaccines are routinely offered in schools to all children and young people but if the individual is in a risk group, the GP practice should also offer this.

Flu vaccine (during flu season)

- those aged 65 years and older although recommendations may change annually so always check Annual Flu Letter
- children eligible for the current season's childhood influenza programme (see Annual Flu Letter for date of birth range)
- those aged 6 months and older in the defined clinical risk groups (see Green Book Influenza chapter)

Pneumococcal vaccine

- those aged 65 years and older
- those aged 2 years and older in the defined clinical risk groups. See Green Book Pneumococcal chapter

As they are only 13-years of age, they are not eligible for shingles or RSV vaccines.

Shingles vaccine

- **severely immunosuppressed individuals** from 18 years of age (eligibility as defined in the Green Book Shingles chapter): 2 doses of Shingrix vaccine 8 weeks to 6 months apart; no upper age limit to start or complete the course
- **immunocompetent individuals** from their 65th or 70th birthday (see Shingles: guidance and vaccination programme on GOV.UK website for eligibility): 2 doses of Shingrix vaccine 6 months to 12 months apart
- **all individuals** between 70 and 79 years of age are eligible for shingles vaccination if they have not received it
- once individuals become eligible, they remain eligible until their 80th birthday. The second dose of Shingrix vaccine can be given up to 81st birthday to those who have commenced but not completed the course

Respiratory syncytial virus (RSV) vaccine

- routinely from 75th birthday
- all adult residents in care homes for older adults (regardless of age). See RSV vaccination programme

Step 3: Plan the schedule

Given the above information and planning, the following schedule should be offered:

Td/IPV + MMR + HPV

4 week interval

Td/IPV + MMR

4 week interval

Td/IPV

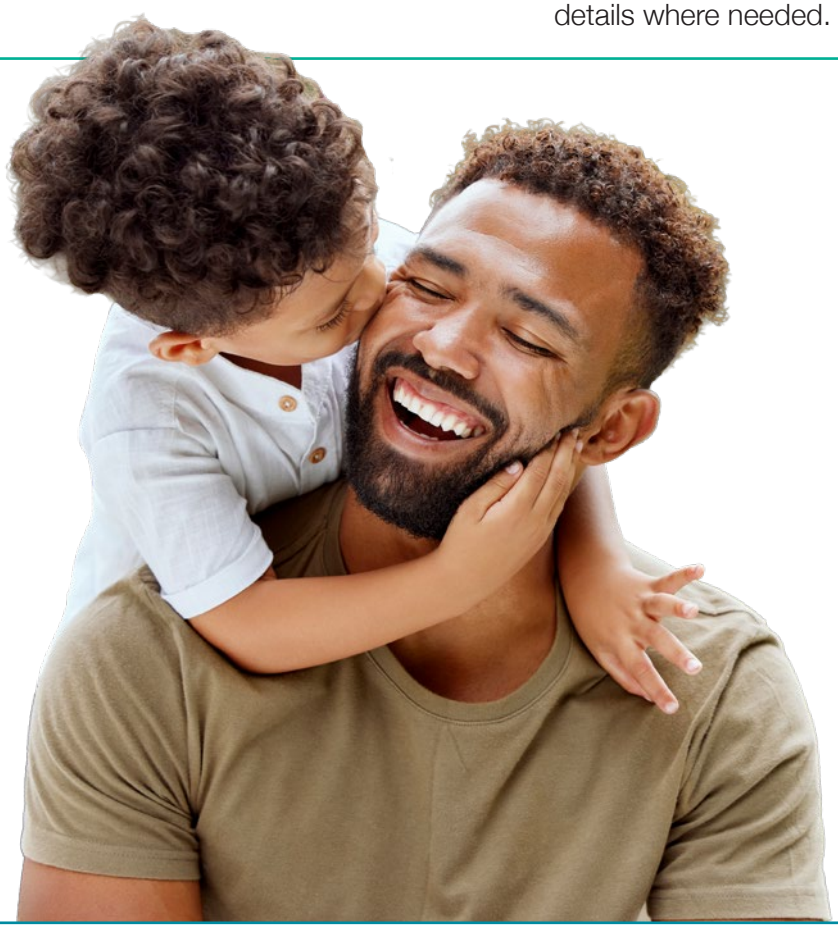
MenACWY to be offered in school, and vaccinator to determine if flu and pneumococcal vaccination are required.

The column also goes on to give advice about booster doses, which explains when the individual should be brought back for their first and second booster doses of Td/IPV. As this child is in the process of completing their primary course, there won't have been a long enough interval for them to receive a Td/IPV booster in school at 14-years of age. Therefore, the subsequent boosters should be provided by the practice at the correct interval.

Subsequent vaccination

First booster of Td/IPV: Preferably 5 years following completion of primary course
Second booster of Td/IPV: Ideally 10 years (minimum 5 years) following first booster

This example highlights the importance of healthcare staff being aware of the contact details of their local SAIS so they can easily communicate any plans or seek advice on the future vaccination of a child. The local NHS immunisation commissioning team can provide information on local arrangements and contact details where needed.



Example 3

Scenario: 52-year-old adult recently entered a secure setting. This individual has a long-term history of injecting drug use and reports having had some vaccinations in the past but has not been registered with a GP for some time so has no documented immunisation history available.

Step 1: Establish a vaccine history

As there is no reliable vaccine history, the vaccinator should adhere to the first general principle, assume this individual is unimmunised and plan a schedule accordingly.

(Following a risk assessment, the setting may determine that this individual should be vaccinated against hepatitis B and other lifestyle-specific vaccinations as well, but by following the algorithm to ensure the individual is up to date with their routine immunisations first, this should then make it easier to identify other context-dependent immunisations afterwards).

Step 2: Identify missing immunisations

The final column (from tenth birthday onwards) should be used for this individual.

From tenth birthday onwards

Td/IPV# + MenACWY* + MMR

Four week gap

Td/IPV + MMR

Four week gap

Td/IPV

* MenACWY is offered routinely around 14 years of age. There is no requirement to give it earlier than this unless particular indication (e.g. travel, post exposure). Individuals who have not received it at this age remain eligible until their 25th birthday. Doses of MenACWY vaccine already received from 10 years of age count as valid doses and do not need to be repeated

HPV vaccine

- all females (born on/after 01/09/91) and males (born on/after 01/09/06) remain eligible for HPV vaccine up to their 25th birthday on the adolescent programme
- eligible immunocompetent individuals aged 11 to 25 years only require a single dose of HPV vaccine
- eligible individuals who are HIV positive or immunosuppressed should be offered a 3 dose schedule at 0, 1, 4-6 months
- for details of GBMSM HPV vaccination programme, please see Green Book HPV chapter
- any dose of Cervarix, Gardasil or Gardasil 9 given from 9 years of age would be considered valid if previously vaccinated or vaccinated abroad

Shingles vaccine

- **severely immunosuppressed individuals** from 18 years of age (eligibility as defined in the Green Book Shingles chapter): 2 doses of Shingrix vaccine 8 weeks to 6 months apart; no upper age limit to start or complete the course
- **immunocompetent individuals** from their 65th or 70th birthday (see Shingles: guidance and vaccination programme on GOV.UK website for eligibility): 2 doses of Shingrix vaccine 6 months to 12 months apart
- **all individuals** between 70 and 79 years of age are eligible for shingles vaccination if they have not received it
- once individuals become eligible, they remain eligible until their 80th birthday. The second dose of Shingrix vaccine can be given up to 81st birthday to those who have commenced but not completed the course

As the individual is 52 years old, they would not be eligible for the MenACWY or HPV vaccines.

Continuing to follow the flow chart, the shingles section will need to be considered. At 52 years of age, this individual may be eligible for shingles vaccination, if they are classed as 'severely immunosuppressed'. The Shingles (herpes zoster): the green book, chapter 28a – GOV.UK will need to be reviewed to determine eligibility.

Flu vaccine (during flu season)

- those aged 65 years and older although recommendations may change annually so always check Annual Flu Letter
- children eligible for the current season's childhood influenza programme (see Annual Flu Letter for date of birth range)
- those aged 6 months and older in the defined clinical risk groups (see Green Book Influenza chapter)

Pneumococcal vaccine

- those aged 65 years and older
- those aged 2 years and older in the defined clinical risk groups. See Green Book Pneumococcal chapter

Continuing to follow the flow chart, depending on any clinical conditions, this individual may be eligible for an annual flu vaccine (if it is flu vaccination season), and pneumococcal vaccination.

The eligibility criteria for shingles, pneumococcal and flu will need to be checked in the relevant Green Book chapters.

They are not eligible for an RSV vaccine.

Respiratory syncytial virus (RSV) vaccine

- routinely from 75th birthday
- all adult residents in care homes for older adults (regardless of age). See RSV vaccination programme

Step 3: Plan the schedule

The following schedule should be offered:

Td/IPV + MMR

4 week interval

Td/IPV + MMR

4 week interval

Td/IPV

Vaccinator to determine if shingles, pneumococcal and flu vaccines are also required (these can be administered at the same time as the routine vaccines identified above).

The column also goes on to give advice about reinforcing doses, which explains when the individual should receive their first and second booster doses of Td/IPV.

Subsequent vaccination

First booster of Td/IPV: Preferably 5 years following completion of primary course
Second booster of Td/IPV: Ideally 10 years (minimum 5 years) following first booster

Once the routine immunisation schedule for this individual is determined, the healthcare professional should then be able to determine if any context-specific vaccinations (e.g. Hepatitis B) are also required. These can be administered at the same time as the routine vaccines identified above.

Common issues

What to do if there is no reliable immunisation history available for an individual

In situations where the vaccinator is unable to determine a vaccine history, the individual should be assumed to be unimmunised and vaccinated accordingly. The risk of leaving the individual unprotected usually outweighs the risk of any potential adverse reactions. The exception to this would be the BCG vaccine (see further information below).

What to do if it has been a long time since the individual last had a dose of vaccine in the course

As immunological memory from priming dose(s) is likely to be maintained in healthy individuals, where any course of immunisation is interrupted, there is normally no need to start the course again – it should simply be resumed and completed as soon as possible. Where vaccination was commenced some time previously however, the product(s) now available or the eligibility criteria may have changed, and the relevant Green Book chapter should therefore be consulted. Please see general principle 2 above for more information.

Intervals between doses of vaccine when a course has been interrupted

There may be situations when a vaccine course is interrupted. As explained in section 2.0, the course does not need to be restarted, it should be resumed. In these situations, it is important that appropriate intervals between doses is maintained. If a vaccine dose is administered with too short an interval, this can detrimentally affect the immune response. This is why it is important that the vaccinator ensures the minimum recommended intervals in the schedule are followed. An example to explain this is the Hepatitis B vaccine 0, 1 and 6 month schedule. If, for whatever reason, the schedule hasn't been followed exactly, the second dose should be given a minimum of 4 weeks (i.e. 1 month) after the first dose and the third dose should be given a minimum of 5 months after the second dose. The intervals between each dose are important to allow the immune system to respond (boost) to build up long-lasting protection.

What to do if there is concern over an individual receiving multiple vaccinations at one appointment

It is important to catch individuals up at the earliest possible opportunity. This may result in multiple vaccinations being administered at the same appointment, which may cause some concerns. There is no upper limit to how many vaccines can be administered at one time and individuals should be reassured that there are no harmful effects from administering multiple vaccines in one session. Please see section 3.3 for more information.

What to do if a vaccinator is unable to translate an immunisation history into English

If a vaccinator is unable to reliably determine a vaccine history, the individual should be assumed to be unimmunised, and a full course of immunisations should be planned. The exception to this would be BCG vaccination, please see below for more information. There are various resources available which can help with determining an immunisation history. Please see section 3.1 for more information.

What to do if an individual has received a booster dose of a vaccine before completing a primary course

It is important that people receive adequate 'priming' doses before they are given any boosters. When booster doses are indicated, this is to provide longer term protection following primary immunisation. Please see section 1.3 for more information.

Previous BCG vaccination

BCG should not be administered to previously vaccinated individuals as there is an increased risk of adverse reactions and no evidence of additional protection. Evidence of a previous BCG vaccination includes documentary evidence, a clear, reliable history of vaccination, or evidence of a characteristic scar.

If there is any doubt, specialist advice should be sought on an individual basis.

Appendix 1:

Vaccine abbreviations, and names and antigen content

Please note that this list is not exhaustive.

Antigen contained (or diseases protected against)	Abbreviation (also known as)	Brand name
Diphtheria, Tetanus, acellular pertussis, Inactivated Polio Vaccine, *Haemophilus influenzae* type b (Hib), Hepatitis B	DTaP/IPV/Hib/HepB (Hexavalent vaccine)	Infanrix Hexa Vaxelis
Meningococcal B	MenB	Bexsero
Rotavirus gastroenteritis	Rotavirus (Rota)	Rotarix
Pneumococcal	Pneumococcal conjugate vaccine The currently supplied vaccine contains 13 serotypes (PCV13)	Prevenar 13
Haemophilus influenzae type b and Meningococcal C	Hib/MenC	Menitorix (Note, this vaccine is no longer manufactured or available to order)
Measles, Mumps and Rubella	MMR	MMRvaxPro Priorix
Measles, Mumps, Rubella and Varicella	MMRV	Priorix-Tetra ProQuad
Measles and Rubella	MR	MR-Vax-II MR-Vac
Oral Polio	OPV	Orimune Sabin TOPV
Diphtheria, Tetanus, acellular Pertussis, Inactivated Polio Vaccine	dTaP/IPV	Boostrix-IPV Repevax
Diphtheria, Tetanus, Inactivated Polio Vaccine	Td/IPV	Revaxis
Diphtheria, Tetanus, Inactivated Polio Vaccine, *Heamophilus influenzae* type b (Hib)	DTaP/IPV/Hib (Pentavalent)	Pediacel

It may also be useful to refer to the following:
A visual guide to vaccines – GOV.UK
Quick Chart of Vaccine-Preventable Disease Terms in Multiple Languages

Appendix 2:

Common diphtheria-containing vaccines

The following shows the antigen content of common diphtheria containing vaccines and whether these contain high or low doses of diphtheria, with a link to their Summary of Product Characteristics (SPCs). SPCs can be found at Home – electronic medicines compendium (emc). Please note that this list is not exhaustive.

Vaccine	Diphtheria content	SPC
Infanrix Hexa DTaP/Hib/IPV/HepB	High dose	Infanrix hexa, Powder and suspension for suspension for injection – Summary of Product Characteristics (SmPC) – (emc) (medicines.org.uk)
Vaxelis DTaP/Hib/IPV/HepB	High dose	Not currently available in the UK
Boostrix IPV dTaP/IPV	Low dose	Boostrix-IPV suspension for injection in pre-filled syringe – Summary of Product Characteristics (SmPC) – (emc) (medicines.org.uk)
Repevax dTaP/IPV	Low dose	REPEVAX – Summary of Product Characteristics (SmPC) – (emc) (medicines.org.uk)
Adacel Tdap (pregnant women only)	Low dose	ADACEL suspension for injection in pre-filled syringe – Summary of Product Characteristics (SmPC) – (emc) | 15553
Revaxis Td/IPV	Low dose	REVAXIS suspension for injection in pre-filled syringe – Summary of Product Characteristics (SmPC) – (emc) (medicines.org.uk)
Pediacel DTaP/IPV/Hib	High dose	Not currently available in the UK

Appendix 3:

Polio containing vaccines: inactivated polio vaccine (IPV), fractional doses (fIPV) and oral polio vaccine (OPV) considerations

OPV

Live OPV is used in some countries, either as part of the routine schedule or to respond to polio outbreaks. This vaccine generates gut immunity and for several weeks after vaccination people can shed the vaccine-virus in their faeces.

The UK transitioned from using OPV to IPV (which contains inactivated (killed) virus) in 2004, the year after poliovirus was declared eradicated in the WHO European region.

The UK immunisation schedule includes five doses of inactivated polio vaccine (IPV) which are given by injection (as part of a combination vaccine with other antigens) and protect against three different polio serotypes (1, 2 and 3). Children coming to the UK may have received oral polio vaccine (OPV). Internationally the trivalent OPV (tOPV) was withdrawn in April 2016 and replaced with the bivalent oral poliovirus vaccine (bOPV), which contains only attenuated virus of types 1 and 3. Therefore, if a child has received any OPV in another country since 2016 as part of their primary course or pre-school booster, these doses should be discounted and every discounted dose should be caught up using a IPV containing vaccine. Most countries that still use OPV have a mixed OPV and IPV schedule, and so if sufficient IPV doses have been received for their age, then no additional IPV doses are needed.

Note: The switch from tOPV to bOPV was to reduce the risk of tOPV seeding new type 2 circulating vaccine-derived polioviruses (cVDPV2). bOPV does not provide immunity against serotype 2 but despite wild type 2 virus having been eradicated since 1999, protection against cVDPV2 is still required.

Children who have received IPV for their primary and/or booster doses and then received a dose of OPV as part of a one-off polio immunisation campaign do not require a dose of IPV to replace this additional OPV dose.

Fractional IPV

Fractional IPV doses (fIPV) may also be given alongside OPV in some countries. fIPV is a 'fraction' of a dose, usually 1/5 of the standard intramuscular vaccine dose, and it is given via the intradermal route. Although it can be very effective when given in areas with supply shortages (as more doses can be given), overall, a single dose of fIPV generates lower immune responses than a standard intramuscular dose (although this difference does narrow after multiple doses). A complete course of polio vaccination in the UK comprises five doses (six doses for children born on/after 1st July 2024) of an inactivated polio vaccine at appropriate intervals, of which at least one should be a full dose (as used in the UK). A child who arrives in the UK part way through the course and has received sufficient doses of inactivated polio vaccine for their age, even if one or more of the doses was a fractional dose, does not immediately need an additional dose. They should follow the UK schedule and receive a dose of IPV-containing vaccine (appropriate for their age) when they attend for their next scheduled dose of diphtheria, tetanus and polio containing vaccine. It is clinically acceptable for them to wait until this routine dose of the vaccine. However, if there is any uncertainty as to whether the individual will return for their routine vaccination appointment, clinicians may use their judgment and take the opportunity to vaccinate immediately.

This may especially be the case when the next scheduled dose is still some time in the future. Although this may result in an additional dose being administered, it will ensure that the individual has received at least one full dose of IPV. A minimum interval of 4 weeks should be maintained between the additional dose of IPV-containing vaccine and any further scheduled dose.

However, if an individual has already completed their 5 (or 6) dose course and has only had fIPV (no full dose IPV), a dose of IPV-containing vaccine should be administered at least 4 weeks after their last dose.

The IPV containing vaccine should be age appropriate, and consideration should be given to where the individual is in the routine schedule. Although a general principle of immunisation is to administer vaccines with the least number of antigens, dTaP/IPV is not licensed for children under 3 years old. In these circumstances, if a child required a dose of an IPV-containing vaccine, the appropriate vaccine to use would be DTaP/IPV/Hib/HepB.

Resources

The UKHSA also produce “Information for healthcare practitioner” documents which may be useful when planning individualised immunisation schedules:

- Childhood schedule changes from 1 July 2025: information for healthcare practitioners – GOV.UK
- COVID-19 vaccination: information for healthcare practitioners
- Hexavalent DTaP/IPV/Hib/HepB combination vaccine: information for healthcare practitioners
- HPV vaccination: information for healthcare practitioners
- Meningococcal ACWY vaccination programme: information for healthcare professionals
- Meningococcal B: information for healthcare practitioners
- Pertussis (whooping cough) vaccination programme for pregnant women: information for healthcare practitioners
- Pneumococcal vaccination: information for healthcare practitioners
- Pneumococcal vaccination for older adults and for individuals in a clinical risk group: Information for healthcare practitioners – GOV.UK
- Rotavirus vaccination programme: information for healthcare professionals
- Respiratory syncytial virus (RSV) programme: information for healthcare professionals
- Shingles vaccination: guidance for healthcare practitioners

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