



South West Healthcare Practitioner Guide to MMR Schedule & Eligibility

Version 1.0

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MMR: Routine Schedule



- In the UK, our immunisation schedule is designed based on clear evidence to protect people against the infections that are most dangerous when they are very young and as people age.
- Two doses of the MMR vaccine are recommended:
 - The first when children are 1 year (on or after the child's first birthday)
 - The second when they are 3 years 4 months (see note below)
 - However, the vaccine can be given safely at any age over 12 months
- Note on second doses:
 - Normally given before school entry at 3 years 4 months, but can be given routinely from eighteen months
 - Should not routinely be given below 18 months
 - Where protection against measles is urgently required, a second dose can be given from 4 weeks after the first

Routine childhood immunisations From September 20				
Age due	Diseases protected against	Vaccine given and	trade name	Usual site
Eight weeks old	Diphtheria, tetanus, pertussis (whooping cough), polio, Haemophilus influenzae type b (Hib) and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Meningococcal group B (MenB)	MenB	Bexsero	Left thigh
	Rotavirus gastroenteritis	Rotavirus	Rotarix ²	By mouth
Twelve weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	Pneumococcal (13 serotypes)	PCV	Prevenar 13	Thigh
	Rotavirus	Rotavirus	Rotarix ²	By mouth
Sixteen weeks old	Diphtheria, tetanus, pertussis, polio, Hib and hepatitis B	DTaP/IPV/Hib/HepB	Infanrix hexa or Vaxelis	Thigh
	MenB	MenB	Bexsero	Left thigh
One year old (on or after the child's first birthday)	Hib and MenC	Hib/MenC	Menitorix	Upper arm/thi
	Pneumococcal	PCV booster	Prevenar 13	Upper arm/thi
	Measles, mumps and rubella (German measles)	MMR	MMRvaxPro ³ or Priorix	Upper arm/thi
	MenB	MenB booster	Bexsero	Left thigh
Eligible paediatric age group ⁴	Influenza (each year from September)	Live attenuated influenza vaccine LAIV	Fluenz Tetra ^{3,5}	Both nostrils
Three years four months old or soon after	Diphtheria, tetanus, pertussis and polio	dTaP/IPV	Boostrix-IPV	Upper arm
	Measles, mumps and rubella	MMR (check first dose given)	MMRvaxPro ³ or Priorix	Upper arm
Boys and girls aged twelve to thirteen years	Cancers and genital warts caused by specific human papillomavirus (HPV) types	HPV ⁶	Gardasil 9	Upper arm
Fourteen years old (school Year 9)	Tetanus, diphtheria and polio	Td/IPV (check MMR status)	Revaxis	Upper arm
	Meningococcal groups A, C, W and Y	MenACWY	Nimenrix	Upper arm

Complete routine immunisation schedule - GOV.UK (www.gov.uk)

MMR: Schedule and Eligibility



Children under ten years of age

- First dose from first birthday between 12 and 13 months of age.
- Immunisation before one year can provide protection for travel or in outbreaks but these doses should be ignored and repeated at the recommended times of between 12 and 13 months and at 3 years 4 months.
- Second dose should be given before school entry but not routinely before 18 months.
- For urgent protection the second dose can be given from one month after the first.
- Second doses given before 15 months should be ignored and repeated after 18 months to ensure full protection.

Children over ten years of age and adults

- All children should have received two doses before they go to secondary school.
- Partially vaccinated or unvaccinated women of child-bearing age should be opportunistically offered MMR doses either at least one month before trying to become pregnant or after they have given birth (pregnant people should not be vaccinated).
- · If two doses of vaccine are required, they should be offered one month apart.
- MMR can be offered to individuals of any age (over 12 months) and should be offered opportunistically and promoted to unvaccinated or partially vaccinated younger adults – particularly those born before 1990.
- Individuals who were born in the UK between 1980 and 1990 may not be protected against mumps but are
 likely to be vaccinated against measles and rubella. They may never have received a mumps-containing
 vaccine or had only one dose of MMR and had limited opportunity for exposure to natural mumps. They
 should be recalled and given MMR vaccine. If this is their first dose, a further dose of MMR should be given
 from one month later.
- Individuals born between 1970 and 1979 may have been vaccinated against measles and many will have been exposed to mumps and rubella during childhood. However, this age group should be offered MMR wherever feasible, particularly if they are at high risk of exposure. Where such adults are being vaccinated because they have been demonstrated to be susceptible to at least one of the vaccine components, then either two doses should be given, or there should be evidence of seroconversion to the relevant antigen.
- Individuals born before 1970 are likely to have had all three natural infections and are less likely to be susceptible. MMR vaccine should be offered to such individuals on request or if they are at high risk of exposure. Where such adults are being vaccinated because they have been demonstrated to be susceptible to measles or rubella, then either two doses should be given or there should be evidence of seroconversion to the relevant antigen.

MMR: Schedule and Eligibility



Individuals with unknown or incomplete vaccination histories

 Unless there is a reliable history of appropriate immunisation, individuals should be assumed to be unimmunised.

MMR – from first birthday onwards

- Doses of measles-containing vaccine given prior to 12 months of age should not be counted.
- 2 doses of MMR should be given irrespective of history of measles, mumps or rubella infection and/or age.
- A minimum of 4 weeks should be left between 1st and 2nd dose MMR.
- If child is <3y4m, give 2nd dose MMR with preschool dTaP/IPV unless particular reason to give earlier.
- Second dose of MMR should not be given <18m of age except where protection against measles is urgently required

Security

Vaccination of individuals with uncertain or incomplete immunisation status

up to tenth birthday

DTaP/IPV/Hib/HepB^# + Hib/MenC^^ + MMR

Four week gap

DTaP/IPV/Hib/HepB^ + MMR

Four week gap

DTaP/IPV/Hib/HepB^

DTaP/IPV/Hib/HepB is now the only suitable

and pertussis antigen for priming children of

this age. Children born from 01/08/17 who

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

require 1 dose of Hib and Men C (until teenage

booster) over the age of 1 year. It does not matter

if 2 Hib-containing vaccines are given at the first

Hib at subsequent appointments if DTaP/IPV/Hib.

Boosters + subsequent vaccination

First booster of dTaP/IPV can be given as early as

1 year following completion of primary course to

re-establish on routine schedule. Additional doses of

DTaP-containing vaccines given under 3 years of age in

some other countries do not count as a booster to the

primary course in the UK and should be discounted.

Subsequent vaccination - as per UK schedule

appointment or if the child receives additional

HepB vaccine is given

All un- or incompletely immunised children only

vaccine containing high dose tetanus, diphtheria

received primary vaccines without HepB should

Infants from two months of age up to first birthday

DTaP/IPV/Hib/HepBas + MenBb + rotavirus Four week gap DTaP/IPV/Hib/HepB + PCV13d + rotavirusc

Four week gap DTaP/IPV/Hib/HepB + MenBb

- A child who has already received 1 or more doses of primary diphtheria, tetanus, polio and pertussis should complete the 3 dose course with DTaP/IPV/ Hib/HepB. Any missing doses of Hib and/or HepB can be given as Hib/MenC and/or, monovalent hepatitis B, at 4 week intervals
- Doses of MenB should ideally be given 8 weeks apart. They can be given 4 weeks apart in order for the primary MenB immunisation schedule to be completed before the first birthday if possible (i.e. if schedule started after 10m of age)
- First dose of rotavirus vaccine to be given only if infant is more than 6 weeks and under 15 weeks and second dose to be given only if infant is less than 24 weeks old
- d Infants who are aged 12 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)

Boosters + subsequent vaccination

As per UK schedule ensuring at least a 4 week interval between primary DTaP/IPV/Hib/HepB and the booster Hib/MenC dose, and a minimum 4 week interval between 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 the primary course 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^{†#} + PCV13^{††} + Hib/Men C^{††} Four week gap

> DTaP/IPV/Hib/HepB^t Four week gap

DTaP/IPV/Hib/HepB[†] + MenB^{††}

†DTaP/IPV/Hib/HepB is now 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 hepatitis B vaccine course

- ††All un- or incompletely immunised children only require 1 dose of Hib. Men C (until teenage booster) and PCV13 over the age of 1 year. It does not matter if 2 Hib-containing vaccines are given at the first appointment or if the child receives additional Hib at subsequent appointments if DTaP/IPV/Hib/HepB vaccine is given. If a child has received PCV10 vaccine abroad, they should be offered 1 dose of PCV13 (at least 4 weeks after PCV10 was given)
- *** Children who received less than 2 doses of MenB in the first year of life should receive 2 doses of MenB in their second year of life at least 8 weeks apart. Doses of MenB can be given 4 weeks apart if necessary to ensure the 2 dose schedule is completed (i.e. if schedule started at 22m of age)

Boosters + subsequent vaccination

As per UK schedule

MMR - from first birthday onwards

- doses of measles-containing vaccine given prior to 12 months of age should not be counted
- · 2 doses of MMR should be given irrespective of history of measles, mumps or rubella infection and/or age a minimum of 4 weeks should be left between 1st and 2st dose MMR.
- if child <3y4m, give 2nd dose MMR with pre-school dTaP/IPV unless particular reason to give earlier
- second dose of MMR should not be given <18m of age except where protection against measles is urgently required

Flu vaccine (during flu season)

- those aged 65yrs 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 polysaccharide vaccine (PPV)

- those aged 65yrs and older
- those aged 2yrs and older in the defined clinical risk groups (see Green Book Pneumococcal chapter)

'If an individual has received any 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.

Effective from 1 September 2023
Most countries who sall use OPV have a mixed OPV and IPV schedule so it sufficient IPV doses have been received for age, no additional IPV doses are needed.

BGG and Hepstitis B vaccines for those at high risk should be given as per Green Book recommendations. Individuals in clinical risk groups may require additional vaccinations. Please check <u>Green Book</u> chapters.

From tenth birthday onwards

Td/IPV* + MenACWY* + MMR Four week gan Td/IPV + MMR Four week gap Td/IPV

Those aged from 10 years up to 25 years who have never received a MenC-containing vaccine should be offered MenACWY

Those aged 10 years up to 25 years may be eligible or may shortly become eligible for MenACWY usually given around 14y of age. Those born on/after 1/9/1996 remain eligible for MenACWY until their 25th birthday

Boosters + 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 would be considered valid if previously vaccinated or vaccinated abroad

Shingles vaccine

severely immunosuppressed individuals

from 50 years of age (eligibility as defined in the Green Book Shingles chapter 28a): 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 and 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. Once

these individuals have 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 immunocompetent individuals aged from 70 years who were previously eligible for shingles vaccination

before 01/09/23 should receive Zostavax (unless contraindicated) until stocks of this vaccine are exhausted, after which Shingrix should be offered

Exceptions: Who Should Not Have MMR?



People who are pregnant

- As a precaution, the MMR vaccine is not recommended for pregnant people.
- You should also avoid becoming pregnant for 1 month after having the MMR vaccine.
- If you had the MMR vaccine while you were pregnant, it's best to let your GP or midwife know
- Evidence suggests there will be no harm to your baby, but it's better to let them know.

People with a weakened immune system

- The MMR vaccine is not recommended for people with a severely weakened immune system.
 For example, if you are having chemotherapy.
- If you have a medical condition, or are taking medicine that may affect your immune system, check if it's safe for you to have the MMR vaccine with your healthcare provider.

People who have had a rare, confirmed very serious allergic (anaphylactic) reaction

 to a previous dose of a measles-, mumps- or rubella-containing vaccine

or

to neomycin or gelatine

About the MMR Vaccines



- M-M-RVaxPRO is manufactured by Merck Sharp and Dohme Ltd.
- Priorix is manufactured by GlaxoSmithKline UK.
- Centrally purchased vaccines for the NHS as part of the national immunisation programme can only be ordered via ImmForm. Vaccines for use as part the national immunisation programme are provided free of charge.
- Vaccines for private prescriptions, occupational health use or travel are NOT provided free of charge and should be ordered from the manufacturers.
- Further information about ImmForm is available at https://www.gov.uk/government/collections/immform, or from the ImmForm helpdesk at helpdesk@immform.org.uk, Tel: 0844 376 0040.
- There are no currently no supply issues for either MMRVaxPro or Priorix.
- There is a cap of 15 on the number of Priorix that can be ordered at a time, however requests to raise this cap will be granted. However, we would ask that MMRVaxPro be used as the first option where possible, to preserve Priorix stocks for the areas and communities where gelatine-free vaccine is needed across the country.

Priorix is gelatine free and should be offered to those requesting a gelatine free vaccine.

UK Health Security Agency NHS

Vaccines and porcine gelatine

This leaflet describes how and why porcine gelatine is used in vaccines

The issue of pork ingredients in some vaccines has raised concerns among some groups.

This leaflet has been developed to provide information about vaccines that contain this product and the alternatives that may be available.

What is gelatine?

Gelatine is a substance derived from the collagen of animals such as chickens, cattle, pigs and fish. Collagen is found in tendons, ligaments, bones and cartilage. Porcine gelatine comes from collagen in pigs. All forms of gelatine for use in medicines are manufactured under strict hygiene and safety regulations.

Why is porcine gelatine used in vaccines?

Gelatine is used in a very wide range of medicines, including many capsules and some vaccines. Porcine gelatine is used in vaccines as a stabiliser – to ensure that the vaccine remains safe and effective during storage. Vaccine manufacturers normally test a wide range of stabilisers and choose one that is stable, good quality and available in sufficient volume. Unlike the gelatine used in foods, the product used in vaccines is highly purified and broken down into very small molecules called peptides.

Why can't vaccines be made with other stabilisers or other types of gelatine?

Developing a vaccine takes many years of laboratory testing and clinical studies to ensure that it is both safe and effective. Once the manufacturer has chosen the stabiliser for the vaccine, any change in this could require extensive laboratory and clinical studies to show that the safety and effectiveness of the vaccine has not been affected. Because of this, developing a new safe and effective vaccine with a different stabiliser may take several years or may never happen.

Which vaccines contain porcine gelatine?

In the UK routine immunisation programme, there are three vaccines that contain porcine gelatine:

- Fluenz® Tetra, the nasal spray vaccine that protects children against flu
- MMR VaxPro®, a vaccine that protects against measles, mumps and rubella
- Zostavax®, the vaccine that protects older adults against shingles.



https://www.gov.uk/government/publications/vacci nes-and-porcine-gelatine Arabic, Bengali, Gujarati, Panjabi, and Urdu



South West MMR FAQs

The following slides contain answers to frequently asked questions from our Immunisation clinical Advice & Response Service (ICARS)

If you have a clinical query about MMR that is not covered here, please contact england.swicars@nhs.net

Common FAQs



- In line with the eligibility guidance above, the first dose of MMR should only be given prior to the scheduled age if the patient is due to travel to an endemic country, or where there is a local outbreak (see below). There may be other circumstances where a clinician deems vaccination outside the routine schedule to be appropriate and this will need to be assessed by a clinician on a case-by-case basis.
- We understand that the current outbreak in the West Midlands has been concerning for parents. However, the South-West region is not currently
 considered an outbreak area and the focus should therefore be on ensuring all individuals are fully vaccinated against MMR in line with the routine
 schedule. It should be noted that even in the West Midlands region only children who have been a close contact for someone confirmed with
 measles are currently being vaccinated outside of the routine schedule. If an outbreak is identified in your local area and individuals are deemed
 eligible for an early MMR vaccine, they will be contacted by the Health Protection Team directly.
- We would recommend ensuring that close family members are up to date with their MMR vaccine and to provide them with information about signs and symptoms of the disease: <u>Measles - NHS (www.nhs.uk)</u>. We obviously recommend avoiding contact with anyone with suspected symptoms.
- To confirm from the <u>Green Book of Immunisation Chapter 21 Measles</u> p.10, there is no upper age limit for MMR vaccines but there may be some individual circumstances to consider for patients based on their age or previous vaccination history.
- Furthermore, the national team have advised in light of the national focus on MMR vaccinations and in anticipation of further contact from the public, to refer to the above guidance to support assessing the prioritisation by age and relative risk of those needing vaccinations and that the emphasis should be on vaccinating those born after the advent of the MMR vaccination programme (before October 1988). There will also be the need to have individual conversations with patients about their vaccination history for those who have come from abroad and/or working in a health care setting further information can be found in the Green Book chapter linked above.

For children aged <1 year during national incident



Please see guidance from the <u>Green Book of Immunisation - Chapter 21 Measles</u> p.9 which states:

The first dose of MMR should be given between 12 and 13 months of age (i.e. within a month of the first birthday). Immunisation before one year of age provides earlier protection in localities where the risk of measles is higher, but residual maternal antibodies may reduce the response rate to the vaccine. The optimal age chosen for scheduling children is therefore a compromise between risk of disease and level of protection. If a dose of MMR is given before the first birthday, either because of travel to an endemic country, or because of a local outbreak, then this dose should be ignored, and two further doses given at the recommended times between 12 and 13 months of age (i.e. within a month of the first birthday) and at three years, four months to five years of age (see Chapter 11)

In line with the above guidance, the first dose of MMR should only be given prior to the scheduled age if the patient is due to travel to an endemic country, or where there is a local outbreak (see below). There may be other circumstances where a clinician deems vaccination outside the routine schedule to be appropriate and this will need to be assessed by a clinician on a case-by-case basis.

We understand that the current outbreak in the West Midlands has been concerning for parents. However, the South-West region is not currently considered an outbreak area and the focus should therefore be on ensuring all individuals are fully vaccinated against MMR in line with the routine schedule. It should be noted that even in the West Midlands region only children who have been a close contact for someone confirmed with measles are currently being vaccinated outside of the routine schedule. If an outbreak is identified in your local area and individuals are deemed eligible for an early MMR vaccine, they will be contacted by the Health Protection Team directly.

We would recommend ensuring that close family members are up to date with their MMR vaccine and to provide them with information about signs and symptoms of the disease: Measles - NHS (www.nhs.uk). We obviously recommend avoiding contact with anyone with suspected symptoms.

Second dose for children aged >18 months



Please see guidance from the Green Book of Immunisation - Chapter 21 Measles p.9 which states:

A second dose is normally given before school entry but can be given routinely from eighteen months. Maternal antibodies may reduce the response to the first dose of vaccination up to the age of 18 months. To provide additional protection to those who fail to respond to the first dose, therefore, the second dose should not routinely be given below 18 months.

Where protection against measles is urgently required, a second dose can be given from one month after the first. If the child is given the second dose at less than 15 months of age, then another routine dose (a third dose) should be given after 18 months in order to ensure full protection, if the child is given the second dose from 15 months of age, no further routine doses are required.

In line with the above guidance, the second dose of MMR should only be given prior to the scheduled age if protection against measles is urgently required. In these circumstances an assessment will be needed by a clinician on a case-by-case basis to determine whether a vaccination outside the routine schedule is appropriate.

We understand that the current outbreak in the West Midlands has been concerning for parents. However, the South-West region is not currently considered an outbreak area and the focus should therefore be on ensuring all individuals are fully vaccinated against MMR in line with the routine schedule. It should be noted that even in the West Midlands region only children who have been a close contact for someone confirmed with measles are currently being vaccinated outside of the routine schedule. If an outbreak is identified in your local area and individuals are deemed eligible for an early MMR vaccine, they will be contacted by the Health Protection Team directly.

We would recommend ensuring that close family members are up to date with their MMR vaccine and to provide them with information about signs and symptoms of the disease: Measles - NHS (www.nhs.uk). We obviously recommend avoiding contact with anyone with suspected symptoms.

Single measles, mumps and rubella vaccines



The general advice we provide is that if the individual (or parents/carer) has had single measles, mumps and rubella vaccines and is open to having another MMR combined vaccine then we would recommend they receive this to consider them fully immunised in the UK.

- 1. Information on single doses of Measles Mumps and Rubella can be found here: Measles, mumps, rubella (MMR): use of combined vaccine instead of single vaccines GOV.UK (www.gov.uk):
 - Single vaccines imported into this country haven't been independently tested for potency and toxicity. We have evidence that some of the single vaccines are less effective or less safe than MMR.
 - No evidence for single vaccines
 Using single vaccines for the diseases would be experimental. It's unclear how long a gap to leave between each vaccines, as there's no evidence on giving the vaccines separately. No country recommends vaccination with the 3 separate vaccines.

Further benefits include:

- Avoiding any delay between injections that could risk illness
- Reducing discomfort for your child
- Reducing the number of appointments needed
- 2. The national team have advised:

If an individual is missing any component of the vaccine (for example has only received an MR vaccine and is missing the mumps component), then we would recommend offering an MMR vaccine. It is important to cover all three diseases (measles, mumps & rubella) and MMR is the best way to ensure this. Measles, mumps or rubella monovalent vaccines are not licensed in the UK and evidence shows better uptake with strong evidence for the safety and effectiveness of MMR vaccine.

For individuals who have received vaccines outside of the UK immunisation schedule (e.g., privately obtained unlicensed vaccines) a risk assessment and a discussion with the individual in question about their vaccine history is advisable. If the source or efficacy is questionable, then revaccination with MMR may be recommended. If, however individuals have been vaccinated in line with the UK schedule and with vaccines from trusted sources (e.g., adults born in UK who had single measles or rubella vaccines as part of the routine schedule before MMR was introduced in 1988, or individuals born or brought up abroad where different combinations were used but all three components have been covered), then this is sufficient and no MMR offer would be required.

- 3. The NHS website states the following MMR (measles, mumps and rubella) vaccine NHS (www.nhs.uk):

 Some private clinics in the UK offer single vaccines against measles, mumps and rubella, but these vaccines are unlicensed. This means there are no checks on their safety and effectiveness. The NHS does not keep a list of private clinics.
- 4. GOV.UK has more about why the NHS uses a combined vaccine.