



**Mae Brechu yn achub bywydau**  
**Vaccination saves lives**

## **MMR – Q&A webinar**

**Vaccine Preventable Disease Programme**

**Public Health Wales**

# Acknowledgements

- UKHSA [Measles: guidance, data and analysis - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/measles-data-and-analysis) for the use of their training slides.
- VPDP.
- Welsh Medicines Advice Service.
- Joanne Garner - Specialty Registrar in Public Health.
- Beverley Gregory - Consultant Nurse HCAI, HARP Team.

The information contained in these slides is accurate at the time of publication (28 February 2024). It is important that immunisers and/or those who are providing immunisation advice, should always ensure they are accessing the most up to date information and refer to the Green book and other authoritative sources when administering vaccines.

# Aim of this session

- Outline the current epidemiology and surveillance data on measles.
- Describe the cause, transmission, clinical presentation, course and possible complications of measles, mumps and rubella infections.
- Describe the available MMR vaccines, their possible side effects and the precautions and contraindications to their administration; explain the dose, schedule and eligibility for MMR vaccines.
- Attendees to understand the importance of promoting, and providing evidence - based information about MMR vaccination to the public, and be confident to answer any questions in an equitable way.
- Improve the knowledge and confidence of healthcare practitioners regarding MMR vaccine and the diseases against which it protects.
- Support those who advise on or administer MMR vaccine by providing evidence - based information.
- Promote high coverage of MMR vaccine in those eligible by providing examples of initiatives and strategies to increase vaccine uptake.
- Outline some of the barriers to MMR uptake and how these can be overcome.



GIG  
CYMRU  
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Cymru  
Public Health  
Wales

## Vaccine Preventable Disease Programme

Systems  
leadership  
with key  
partners  
(within and  
external to  
NHS)

Surveillance  
and  
Epidemiology

Health  
professional  
Engagement  
/ Specialist  
Clinical  
Support

Public /  
External  
Stakeholder  
Engagement

Evidence  
synthesis –  
support  
evidence-  
based  
practice and  
evaluation

# Key messages

Measles is highly infectious; one case of measles can infect 9 out of 10 of unvaccinated close contacts.

- There can also be a temporary reduction in the immune response for a few weeks following measles infection. This can increase the risk of severe secondary bacterial and viral infections.
- Complications are more common and more severe in young infants, adults, immunosuppressed individuals and during pregnancy\*.
- Unvaccinated women of childbearing age should be offered vaccine before becoming pregnant. Following vaccination, pregnancy should be avoided for one month.
- 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.
- MMR vaccine can be given to individuals of any age and should be offered opportunistically and promoted to unvaccinated or partially vaccinated younger adults – particularly those born between 1970 and 1990.  
<https://www.gov.uk/government/publications/measles-the-green-book-chapter-21>
- Individuals born before 1970 are likely to have had natural infection with measles, mumps and rubella and are unlikely to be susceptible. However, MMR vaccine should be offered to such individuals on request or if they are considered to be at high risk of exposure.
- **Make Every Contact Count (MECC)** - check immunisation history of every patient, especially for children, new GP registrations including young people joining a practice when they move for college or university, those entering prison or military service, traveller communities, new migrants, refugees and asylum seekers. All travellers to endemic/ epidemic areas should be fully immunised according to the UK schedule.

# Welsh Health Circulars

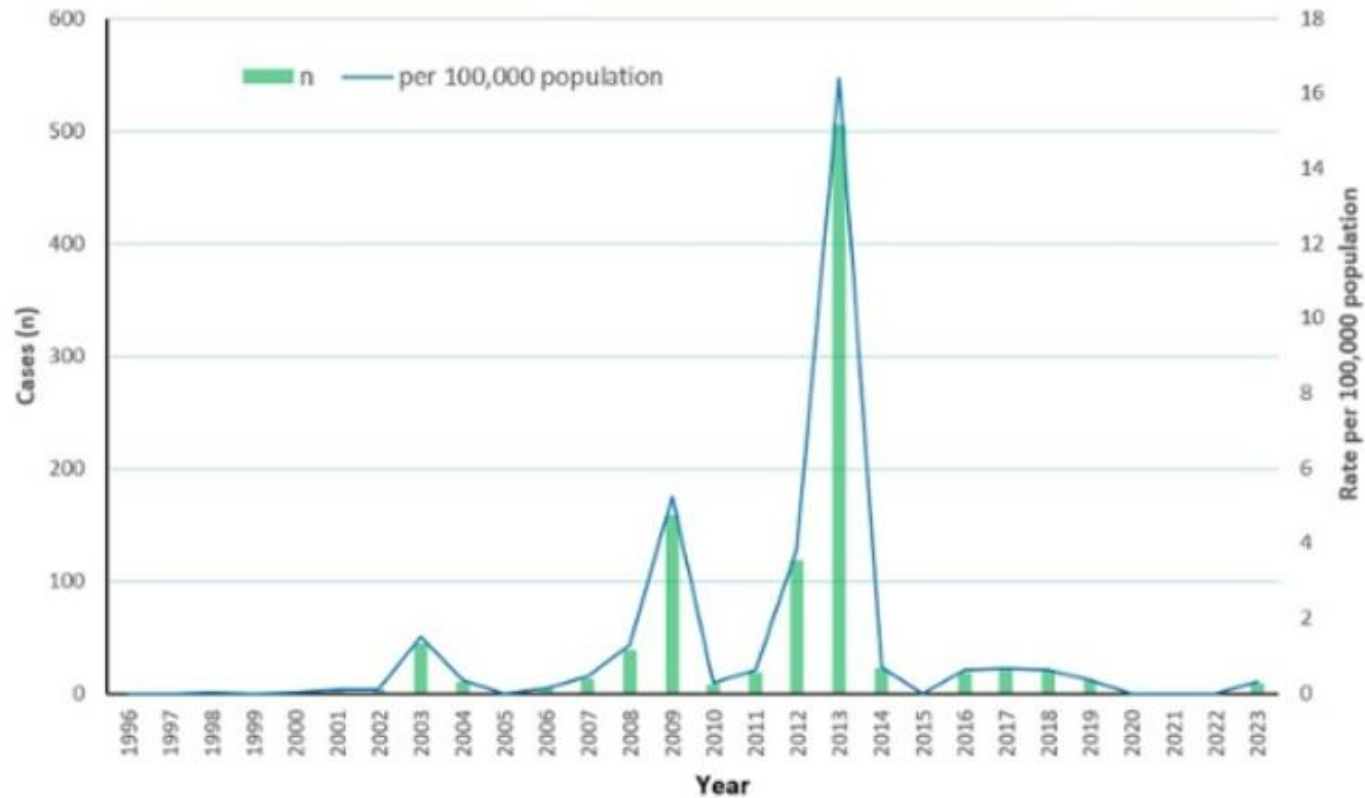
- Following the measles outbreak in Cardiff, The following Welsh Health Circular was published on 14 December 2023: **Vaccination of healthcare staff to protect against measles (WHC/2023/043)** with a reminder of the need to ensure that all staff working in healthcare settings should either have natural immunity to measles or have had a full 2-dose course of MMR (Measles Mumps and Rubella) vaccine. <https://www.gov.wales/sites/default/files/publications/2023-12/vaccination-of-healthcare-staff-to-protect-against-measles.pdf>
- Previous experience of measles outbreaks shows that schools with low uptake are particularly vulnerable to the threat of sustained transmission of measles within the school setting, potentially becoming a source of breakout transmission into the wider community. The following Welsh Health Circular was published on the 2<sup>nd</sup> February 2024: **Vaccination of children to protect against measles (WHC/2024/008)**.
- **This is an urgent 6-month uptake improvement plan.** By 31 July 2024, every school in Wales with 50 pupils or more on roll has 90% of its pupils recorded as having received two doses of MMR for pupils of reception age and above <https://www.gov.wales/vaccination-children-protect-against-measles-whc2024008>

# **Current epidemiology and surveillance data on measles**

**Fran Rowley - Senior Epidemiological Scientist,  
Health Protection Team, PHW**

**Charlotte McDermott - Epidemiologist, VPDP, PHW**

# Measles in Wales



WHO elimination status for UK was granted in 2017 and revoked in 2019.

Current epidemiology:

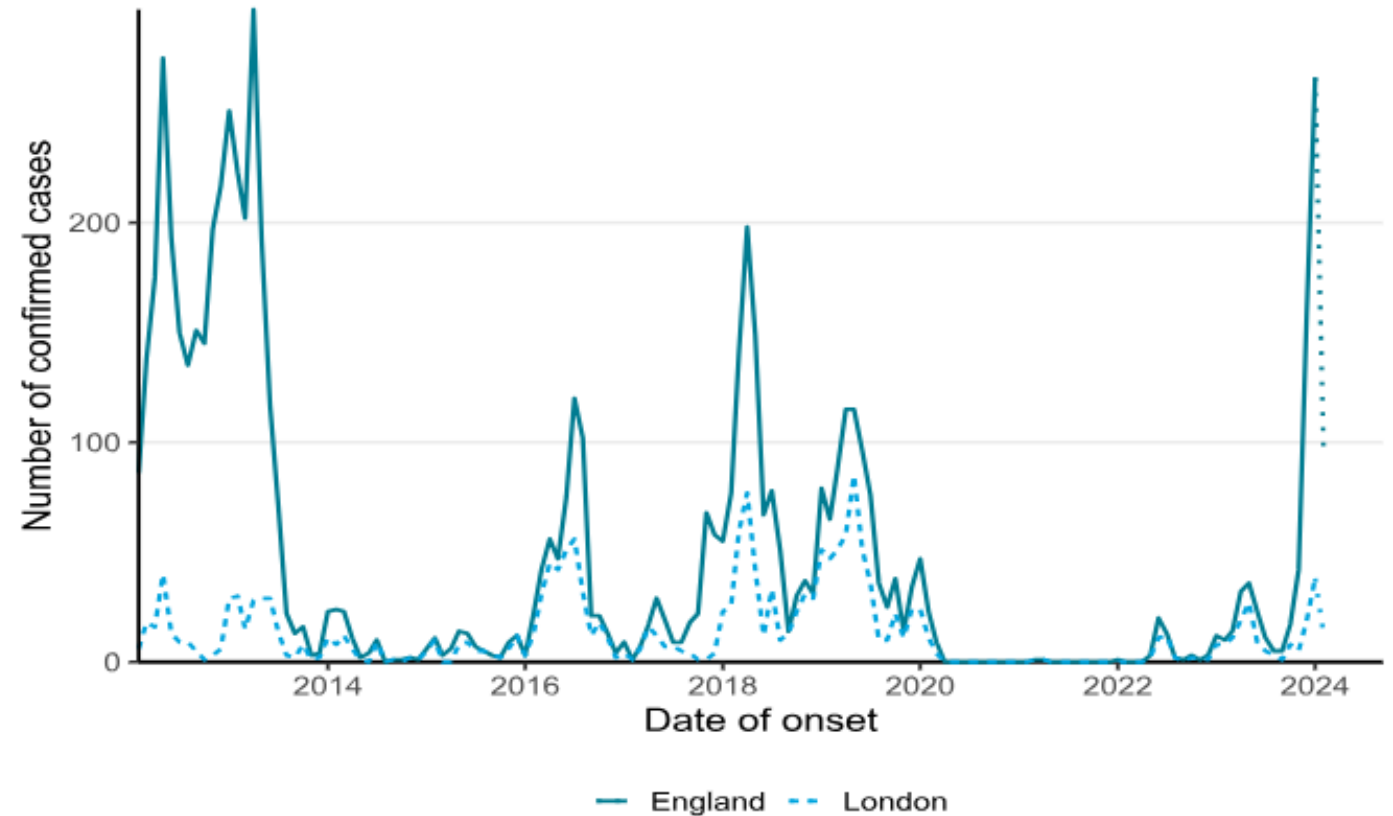
- October 2023: Cardiff Measles outbreak
  - 8 confirmed cases – majority in children.
  - All epidemiologically linked.
  - Control measures enacted in relevant settings.
- 2024: zero confirmed cases in Wales.



# Measles in England

Since 1 October 2023:

- There have been 581 laboratory confirmed cases of measles in England.
  - West Midlands: 381 (66%)
  - London: 83 (14%)
  - Yorkshire and The Humber: 43 (7%)
- Age split:
  - <10 years: 379 (65%)
  - >15 years: 154 (27%)
- Most cases have been unvaccinated.



# Current epidemiology and surveillance data

## Uptake Data: Latest Quarterly COVER Report Oct-Dec 2023

*These results are for children living in Wales in December 2023 and reaching their second, fourth and fifth birthdays during the quarter 01/10/2023 to 31/12/2023.*

- Uptake of the **first dose of MMR** in children reaching their second birthday (scheduled at 12 to 13 months of age) was **93.0%** this quarter.
- In children reaching **four years of age** this quarter, coverage of **one dose of MMR** was **94.8%**. Coverage of **two doses of MMR** was **86.4%**.
- In children reaching **five years of age** this quarter, coverage of **one dose of MMR** was **95.4%**. Coverage of **two doses of MMR** was **89.3%**.

**\*\* Pre-Publication Data \*\***

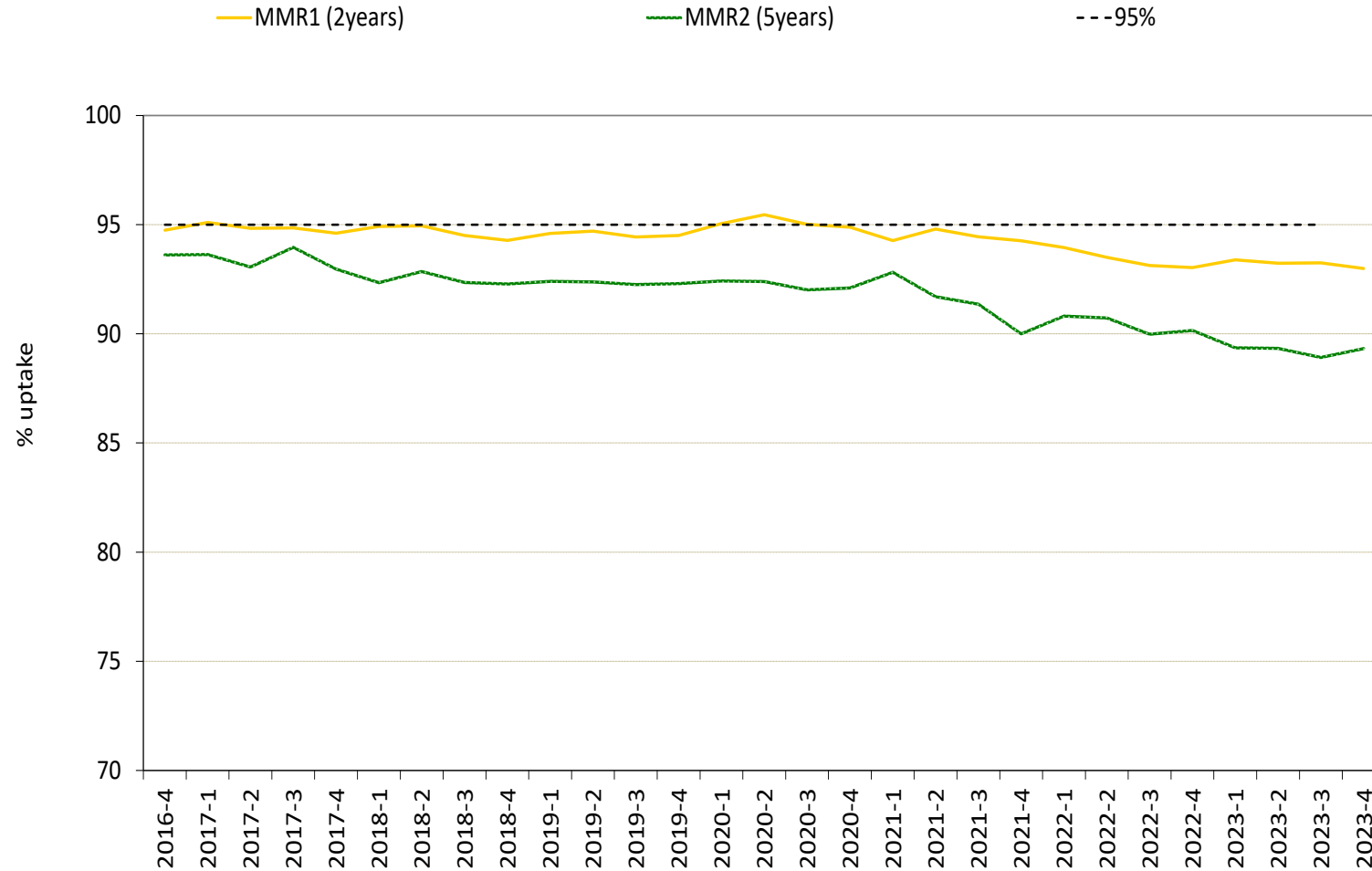
# Current epidemiology and surveillance data

## Uptake Data: **Uptake in Children in Wales COVER Annual Report 2023**

*These annual results for 2022/23 are for one year cohorts of children living in Wales as at 31/03/2023 and reaching their first, second, fourth and fifth birthdays between 01/04/2022 and 31/03/2023.*

- MMR uptake of **one dose** by **two years of age** decreased to **92.9%**, compared to **94.2%** in the previous year.
- MMR uptake of one dose in children ages four years of age was **95.2%**. Uptake of two doses was **85.6%**.
- MMR uptake of **two doses** in children at five years of age was **89.5%**. Uptake of one dose was **95.2%**.

# Percentage uptake of childhood immunisations in Wales, quarter 4 2016 to quarter 4 2023



# Uptake Data: MMR coverage in school-aged children in Wales Annual report 2022/23

Describes the coverage of one and two doses of MMR vaccination in children from 5 to 16 years of age in Wales during the 2022/23 academic year.

Birthday reached during 2022-23 academic year	Children  (n)	MMR1 immunisation coverage		MMR2 immunisation coverage	
		(n)	(%)	(n)	(%)
5th to 11th	249636	237560	95.2	227679	91.2
12th to 16th	188275	178856	95.0	173090	91.9
Total	437911	416416	95.1	400769	91.5

# Uptake Data: MMR coverage in school-aged children in Wales Annual report 2022/23

Numbers of unimmunised or partially immunised children reaching their 5<sup>th</sup> to 16<sup>th</sup> birthdays between 01/09/2022 and 31/08/2023, as at the end of the 2022/23 academic year.

Birthday reached during 2022-23 academic year	Children (n)	Children without any documented MMR vaccine		Children started, but not complete	
		(n)	(%)	(n)	(%)
5th to 11th	249636	12076	4.8	9881	4.0
12th to 16th	188275	9419	5.0	5766	3.1
<b>Total</b>	<b>437911</b>	<b>21495</b>	<b>4.9</b>	<b>15647</b>	<b>3.6</b>

# Uptake Data: **MMR coverage in school-aged children in Wales Annual report 2022/23**

- For children reaching **2 years of age** between 01/09/2022 and 31/08/2023:
  - Uptake of **MMR dose 1: 94.1%**
  - Total number of **unvaccinated** children: **1712.**
- For children reaching **4 years of age** between 01/09/2022 and 31/08/2023
  - Uptake of **MMR dose 1: 95.7%**
  - Uptake of **MMR dose 2: 88.7%**
  - Total number of **unvaccinated** children: **1362.**
  - Total number of **partially immunised** children: **2197.**

# **Overview of measles, mumps and rubella infections**

**Hawys Youlden - Lead Nurse/Practitioner  
Immunisations, VPDP, PHW**



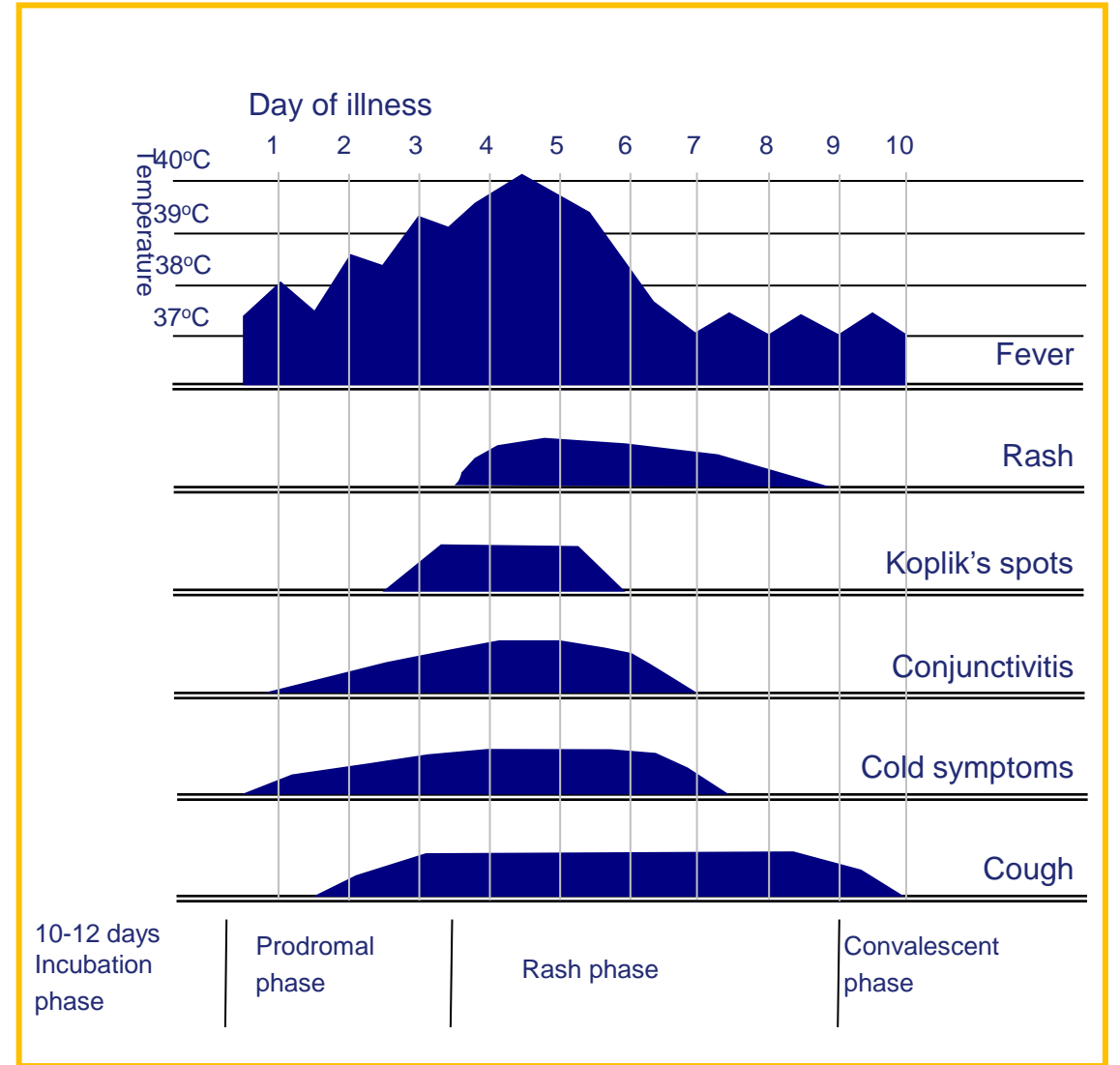
# Measles

- Measles is a highly infectious, acute, systemic viral illness caused by a morbillivirus of the paramyxovirus family.
- It is transmitted through the respiratory route (airborne or droplet spread) or by direct contact with the nasal or throat secretions of infected persons and is the most infectious of all diseases transmitted through the respiratory route; transmission is high amongst household contacts and other individuals with prolonged close contact.
- Measles can be very debilitating for very young infants, adults, immunosuppressed individuals and pregnant women - who are more likely to develop complications and require hospitalisation.
- Cases of measles are most common in children, although it can affect any age group.
- The incubation period is around 10 days (range 7 to 21 days).
- The infectious period begins from about 4 days before the first symptoms appear (prodromal period) and lasts up to 4 days after the onset of the rash.

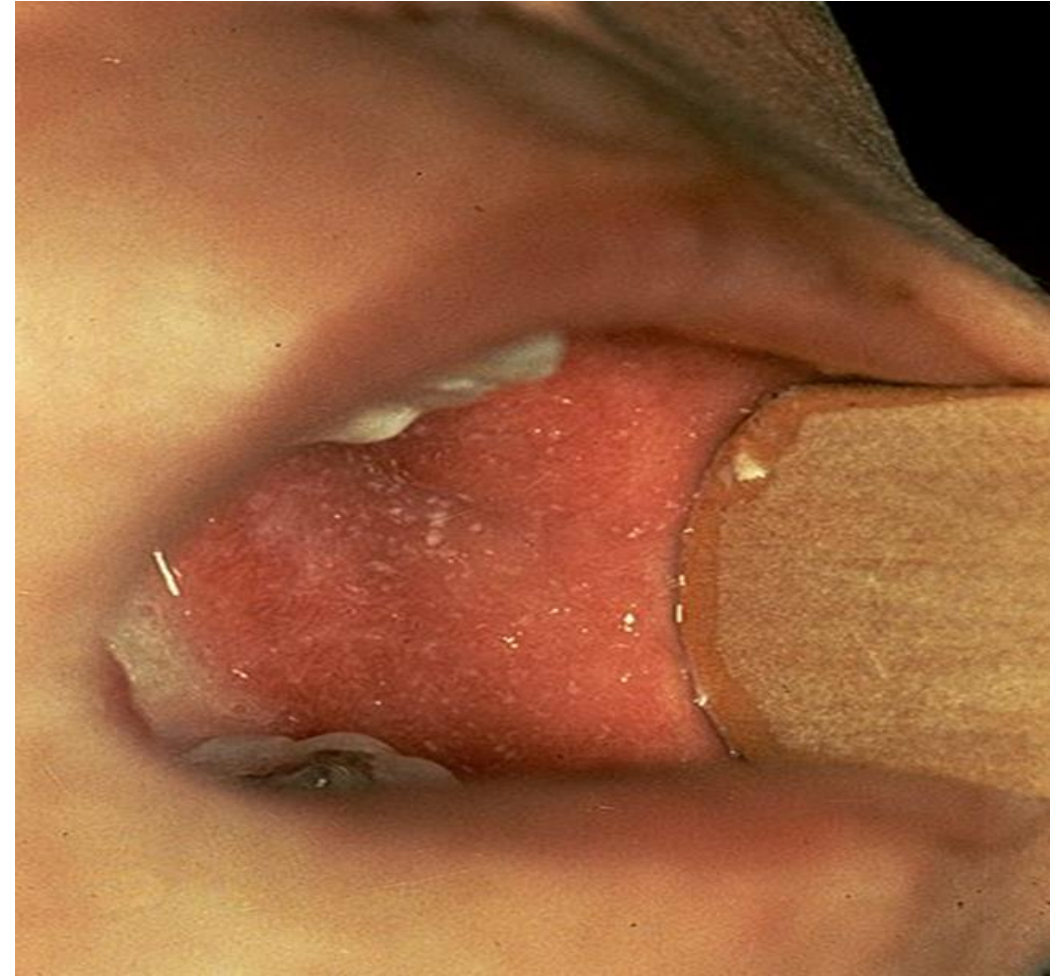
# Clinical course of measles

Signs and symptoms:

- Fever.
- Cough.
- Coryza.
- Conjunctivitis.
- Erythematous, maculopapular rash: a red blotchy rash, normally starting from the head and spreading to the trunk and limbs.
- Malaise (irritable / miserable child).



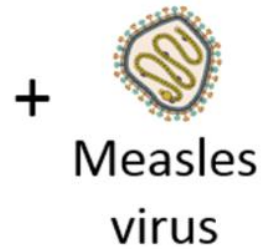
# Measles rash and Koplik spots




Images: UKHSA

# Measles: key facts

100 susceptible people  
(e.g. not vaccinated against measles)



=

About 90 people will catch measles,  
7 with complications .



- Measles is caused by a virus that spreads very easily. One case of measles can infect 9 out of 10 of unvaccinated close contacts.
- Transmitted through the respiratory route (airborne or droplet spread) or by direct contact with the nasal or throat secretions of infected persons.
- Incubation period: 10 to 12 days from exposure to onset of symptoms, but can vary from 7 to 21 days.
- Infectious period: 4 days before onset of rash to 4 days after onset of rash.
- A range of videos on immunisation and related topics are available on the UKHSA YouTube channel:

How contagious is measles? with Dr Colin Campbell <https://youtu.be/Xe7FPKZgNgw>



# Measles complications (1)

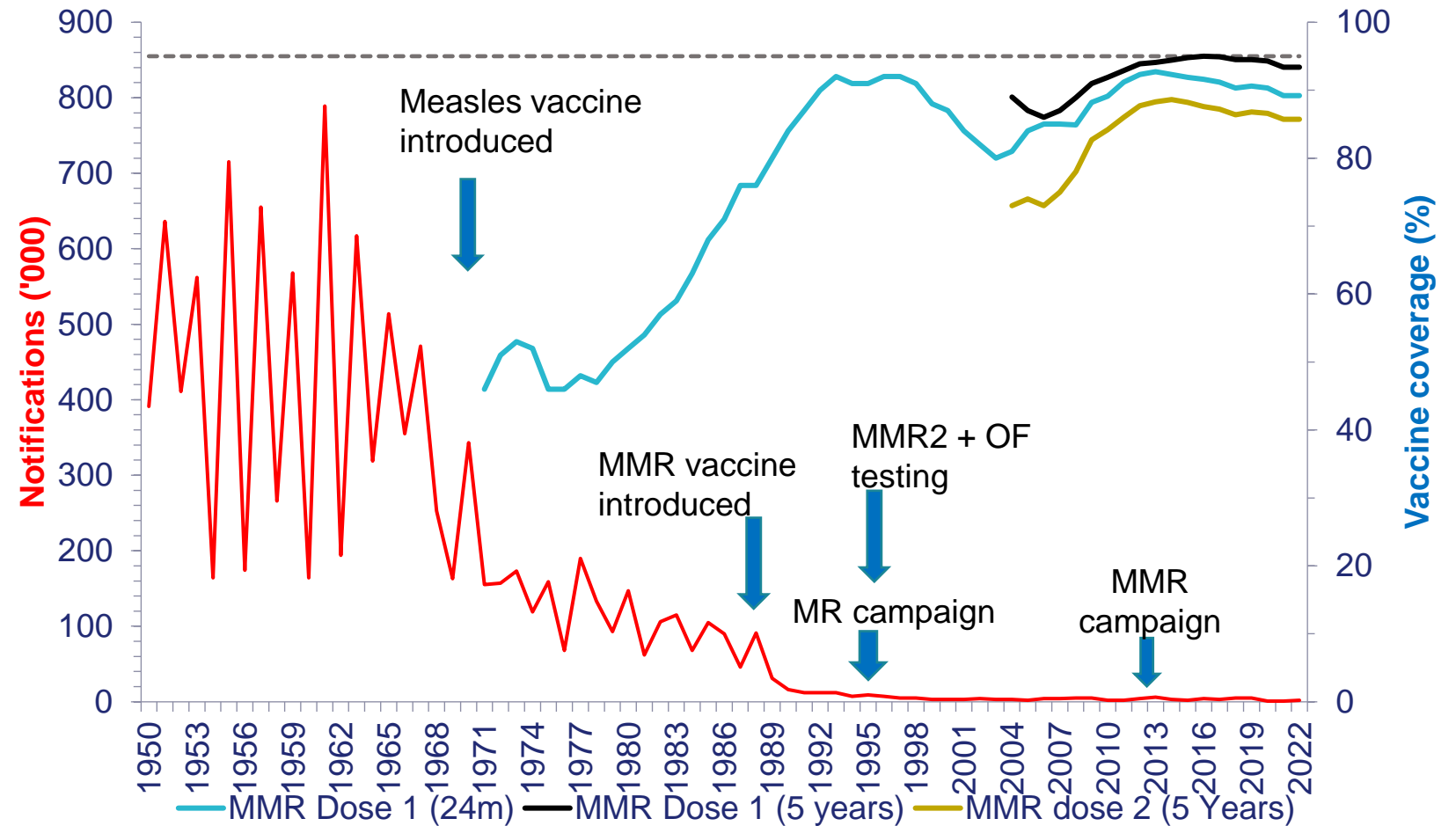
- Complications are more common and more severe in young infants and adults, immunosuppressed individuals and during pregnancy.
- Historically, death occurred in one in 5,000 cases (100s of cases a year before immunisation was introduced); between 2000 and 2020, there were 8 deaths in children or adults in England and Wales that could have been prevented by the UK national immunisation programme, i.e., the infection was acquired in England or Wales and the individuals were eligible for a measles-containing vaccine in this country.
- Complications include pneumonia (1-6%), otitis media (7-9%) and diarrhoea (8%).
- There can also be a temporary reduction in the immune response for a few weeks following measles infection; this can increase the risk of severe secondary bacterial and viral infections.

# Measles complications (2)

- Secondary bacterial infections can lead to complications such as tracheobronchitis and pneumonia.
- Encephalitis is rare (0.05% to 0.1% of cases).
- A very rare but fatal neurological complication, called sub-acute sclerosing panencephalitis (SSPE), is caused when measles virus establishes chronic infection in the brain. It happens in about one in every 25,000 cases (1 in 8,000 if aged under 2 years). This is a progressive illness with neuro-cognitive symptoms and in most cases leads to coma and death.
- The Oxford vaccine group have the following patient's story:  
<https://vaccineknowledge.ox.ac.uk/files/sspe-serious-complication-measles>

# Historical measles epidemiology and measles vaccine coverage

UK coverage of measles vaccination and measles notifications from 1950 to 2022.



# Mumps overview

- Mumps is an acute, systemic viral illness that is moderately infectious. It is caused by the paramyxovirus, is spread in infected droplets of saliva and leads to swelling of the parotid glands.
- Mumps is vaccine preventable. Around 88% of people who have 2 doses of the MMR vaccine will be protected against mumps. People who are vaccinated against mumps, but still catch it, are less likely to have serious complications or be admitted to hospital.
- Most cases of mumps now occur in young adults between the ages of 16 and 30
- Prolonged close contact in schools and universities provides ideal conditions for the infection to spread.
- Although there is no evidence that it causes fetal abnormalities, mumps in the first trimester of pregnancy may increase the rate of spontaneous abortion.



Photo courtesy of CDC



# Rubella overview

- Rubella is an acute, systemic, mild viral illness caused by a togavirus; it is also known as German measles.
- Cases are most common in non-immune children and young adults. Before the introduction of rubella vaccination, more than 80% of adults had evidence of previous rubella infection.
- **The WHO confirmed that the UK achieved elimination status for rubella in 2016. There have been no new laboratory confirmed cases of rubella reported in the UK since 2019.**
- Antenatal testing for rubella antibodies (immunity) stopped in 2016 due to women of childbearing age being mostly immune through vaccination. As part of antenatal care, MMR vaccination status should be checked for all pregnant women. Those who are not up to date with their MMR vaccines should be referred to their GP to catch-up postnatally to protect future pregnancies.



Photo courtesy of CDC

# **Routine MMR immunisation programme and additional recommendations**

Juliet Norwood  
Specialist Nurse Immunisation, VPDP, PHW

# Proposed changes to the routine schedule expected in 2025

On 5<sup>th</sup> of August 2022 the JCVI issued an interim statement on changes to routine infant schedule – following notification of discontinuation of Menitorix (Hib/Men C).

Independent report

## **Joint Committee on Vaccination and Immunisation (JCVI) interim statement on the immunisation schedule for children**

Published 5 August 2022

[Joint Committee on Vaccination and Immunisation \(JCVI\) interim statement on the immunisation schedule for children](https://www.gov.uk/government/consultations/jcvi-interim-statement-on-the-immunisation-schedule-for-children)  
[- GOV.UK \(www.gov.uk\)](https://www.gov.uk)

Independent report

# JCVI statement on a childhood varicella (chickenpox) vaccination programme


Published 14 November 2023

- The JCVI recommends that a universal varicella (chickenpox) programme should be introduced as part of the routine childhood schedule.
- They recommend a 2-dose programme at 12 and 18 months using the combined MMRV (measles, mumps, rubella and varicella) vaccine.
- A catchup programme is also recommended following implementation of the programme, to prevent a gap in immunity.

[Childhood varicella vaccination programme: JCVI advice, 14 November 2023 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/jcvi-recommends-universal-childhood-varicella-vaccination-programme)

# Implications for schedule...

AGE	NOW	PROPOSED/CHANGES
8 weeks	6-in-1, Men B, Rotavirus	“ “
12 weeks	6-in-1, PCV, Rotavirus	“ “
16 weeks	6-in-1, Men B	“ “
12-13 months	Hib/MenC, PCV, MMR 1, Men B	No Hib/Men C. MMRV
18 months** Additional visit		Additional 6-in-1, MMRV
2-3 years	Flu	“ “
3 years 4 months	4-in-1, MMR 2	No MMR 2
12-14 years	HPV	“ “
13+14 years	3-in-1, Men ACWY	“ “



# Current UK vaccine eligibility and general principles (1)

- Children should be offered the MMR vaccine according to the routine schedule:
  - First MMR dose at 12 months of age.
  - Second MMR dose at 3 years and 4 months or soon after – this dose can be given routinely from 18 months of age.
- Individuals with uncertain or incomplete immunisation histories should be brought up to date at the earliest opportunity [Vaccination of individuals with uncertain or incomplete immunisation - GOV.UK \(www.gov.uk\)](#)
- Anyone who has missed out on their 2 doses of MMR vaccine can be brought up to date at any age. There are no negative effects from vaccinating people who are already immune.
- MMR vaccine can be given to individuals of any age and should be offered opportunistically and promoted to unvaccinated or partially vaccinated younger adults –particularly those born between 1970 and 1990. <https://www.gov.uk/government/publications/measles-the-green-book-chapter-21>

# Current UK vaccine eligibility and general principles (2)

**Make Every Contact Count (MECC)** - check immunisation history of every patient, especially for children. New GP registrations including young people joining a practice when they move for college or university, or other higher education institutions, prison or military service, traveller communities, new migrants, refugees and asylum seekers. All travellers to endemic/ epidemic areas should be fully immunised according to the UK schedule.

**Staff involved in direct patient care** (including reception staff / anyone who has contact with patients).

## **Offer/recommend vaccine if unvaccinated:**

- Children should receive 2 doses of MMR vaccine routinely at age 12 months and 3 years and 4 months.
- Older children and adults who are unvaccinated or partially vaccinated should also be offered vaccination. There is no upper age limit – 2 doses should be given at least 4 weeks apart. It is safe to receive an extra MMR dose.
- Individuals born before 1970 are likely to have had natural infection with measles, mumps and rubella and are unlikely to be susceptible. However, MMR vaccine should be offered to such individuals on request or if they are considered to be at high risk of exposure.

# Current UK vaccine eligibility and general principles (3)

- 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.
- 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 and at three years, four months to five years of age.
- 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.



# Key opportunities to review MMR status

Remind / discuss / offer/ signpost:

- Starting / returning to nursery.
- Before starting primary school.
- School entry – reception/year 1 age 4-5.
- School transition – year 6/7 age 10/11.
- ‘Back to school’ – before each school year.
- Adolescent immunisation programme – HPV, MenACWY, Td/IPV (school leavers’ booster).

# Frontline health and social care workers

Although there is no evidence that HCWs have lower MMR uptake than the general population, as they are in close contact with individuals receiving care, they are at increased risk of both catching measles and spreading it to them and to colleagues.

- All frontline health and social care workers with direct patient/service user contact should have satisfactory evidence of protection of 2 doses of MMR or a record of natural immunity.
- This includes staff in all NHS trusts, general practices, care homes, and domiciliary care.

Employers are encouraged to :

- Commission a service which makes access to the vaccine easy for all staff.
- Encourage staff to get vaccinated.

The definitions in the Green Book [Chapter 12](#) should be used to identify those eligible as part of the frontline and social care workers' programme.

**The following Welsh Health Circular was published on 14 December 2023: Vaccination of healthcare staff to protect against measles (WHC/2023/043)**

<https://www.gov.wales/sites/default/files/publications/2023-12/vaccination-of-healthcare-staff-to-protect-against-measles.pdf>

# Pregnancy

- In pregnancy, measles can lead to miscarriage, stillbirth, premature birth or low birth weight.
- Risk assessment of contacts.
- Contact is defined as:
  - Face to face contact of any length, or,
  - more than 15 minutes in a small, confined area.
- The most vulnerable contacts are:
  - Infants.
  - Pregnant women.
  - Immunosuppressed individuals.
- If indicated, human normal immunoglobulin (HNIG) should be given as soon as possible, ideally within 72 hours and up to 6 days after exposure
- Recommendations for pregnant women are based on a combination of age, vaccination history and / or antibody testing. For further information see: National measles guidelines: <https://www.gov.uk/government/publications/national-measles-guidelines>

# Pregnancy

- There are currently no recommended interventions for pregnant women who have a known contact with a case of mumps: <https://www.gov.uk/government/publications/mumps-risk-in-pregnancy-infection-in-healthcare-settings-and-mmr-vaccine/mumps-risk-in-pregnancy-infection-in-healthcare-settings-and-mmr-vaccine>
- Maternal rubella infection in pregnancy may result in fetal loss or in congenital rubella syndrome (CRS). CRS presents with one or more of the following:
  - Cataracts and other eye defects.
  - Deafness.
  - Cardiac abnormalities.
  - Microcephaly.
  - Retardation of intra-uterine growth.
- Inflammatory lesions of brain, liver, lungs and bone marrow. Infection in the first eight to ten weeks of pregnancy results in damage in up to 90% of surviving infants; multiple defects are common. <https://www.gov.uk/government/publications/rubella-the-green-book-chapter-28>

# Pregnancy and breast-feeding

- There is no evidence that rubella-containing vaccines cause abnormal fetal development. However, as a precaution, MMR vaccine should not be given to women known to be pregnant. When MMR vaccine is given to adult women, they should be advised to guard against pregnancy for one month. There are no safety concerns, either for the mother or the baby, when rubella-containing vaccine is given in pregnancy or shortly prior to pregnancy. Women who have been immunised with MMR or single rubella vaccine in pregnancy can be immediately reassured ([see “MMR vaccine: advice for pregnant women”](#)). Such an incident would not be a reason to recommend termination of pregnancy.
- All exposures to MMR vaccine from 30 days before conception to any time in pregnancy should be reported to the UK Vaccine in Pregnancy Surveillance programme. This is run by the Immunisation Department of UK Health Security Agency.

# Women of childbearing age

- As MMR vaccine is a live vaccine, it is not recommended to be administered during pregnancy due to a theoretical risk of vaccine virus transmission to the unborn baby.
  - Inadvertent vaccination has taken place in more than 3500 susceptible women during the early stages of pregnancy and no cases of foetal damage or congenital rubella syndrome have been reported.
- **Unvaccinated women of childbearing age should be offered vaccine before becoming pregnant. Following vaccination, pregnancy should be avoided for one month.**
  - if it is not possible to vaccinate before pregnancy, vaccination should be deferred until the woman is no longer pregnant.
- Services accessed by women including contraceptive services, fertility services, post natal appointments, 6 to 8 week maternal check appointments and cervical screening appointments are all opportunities to remind women of their eligibility if they have not already been vaccinated.

# Key actions

- **Staff** should have documented evidence of 2 doses of the MMR vaccine or have evidence of natural immunity.
- Check **MMR status of all pregnant women** and refer unvaccinated / partially vaccinated women to their GP practice to catch-up after they deliver.
- Direct anyone presenting with a **rash** in an antenatal clinic to a side room on arrival.
- Unvaccinated pregnant contacts of a known case of measles (diagnosed by a healthcare professional) may require immunoglobulin (HNIG).
- The Health Protection Team should be contacted with any details of any cases of infectious disease or to report any incidents or outbreaks, Tel. 0300 00 300 32. The team contributes to the all-Wales Acute Response Service. Email: [AWARE@wales.nhs.uk](mailto:AWARE@wales.nhs.uk)
- Please **contact your local Health Protection Team (HPT)** urgently for assistance with a risk assessment and advice on post exposure prophylaxis. Your HPT and Infection Prevention Control Team will also lead on a **risk assessment for measles outbreak investigation and response**.

# Outbreaks

- Contact with suspected measles, mumps or rubella provides a good opportunity to offer MMR vaccine to previously unvaccinated individuals.
- As vaccine induced antibodies for measles develop more rapidly than those following natural infection, MMR vaccine should be offered to any healthy unvaccinated or incompletely vaccinated individual exposed to measles who has not had it in the past.
- To be effective, vaccine must be administered, ideally within 3 days, but even when it is too late to provide effective post-exposure prophylaxis against measles, MMR vaccine can provide protection against future exposure to all 3 infections.
- Where immediate protection against measles is required, for example following exposure, MMR may be given from six months of age. If given before 12 months of age, a sub-optimal response may be observed. For this reason, doses given before 12 months of age should be discounted and the routine schedule followed at the recommended ages.
- Antibody response to the mumps and rubella components of MMR vaccine does not develop soon enough after exposure to provide effective prophylaxis.
- Outbreaks of measles, mumps or rubella should be notified to the local health protection team who will conduct a risk assessment and advise on the response.



# Exclusion recommendations

- Health care workers (HCWs) who are exposed to a confirmed or likely case of measles and do not have satisfactory evidence of protection should be excluded from work for up to 21 days following exposure.

## Educational settings

- Confirmed and likely cases should be excluded from nursery or school for the infectious period (from 4 days before rash onset and for a further 4 full days) Given the high risk of secondary infection following measles, it is advisable to return to nursery or school only after full recovery. Susceptible contacts of cases (for example unvaccinated siblings) are at high risk of developing measles and should be advised to self-exclude from school for the incubation period.
- More detailed information about infection control in school settings can be found in the UKHSA guidance on infection control in schools and other childcare settings: [Health protection in children and young people settings, including education - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/health-protection-in-children-and-young-people-settings-including-education)



UK Health  
Security  
Agency



# Think measles!

Vaccination rates have fallen, and cases of measles are increasing in England.

Any patient with fever and a rash is potentially infectious  
and should be directed to a side room on arrival.

Isolate anyone presenting with a rash and fever straight away



- measles starts with a 2 to 4 day "prodromal" phase before the rash appears, with coryza, cough, conjunctivitis and a fever
- fever typically increases, to peak around rash onset
- rash generally starts behind the ears, spreads to the face and then expands onto the trunk and can become generalised. The rash is red, blotchy, maculopapular (not itchy) and lasts around 3 to 7 days
  - the rash is more difficult to spot on dark skin (see images 3, 4 and 5)
  - Koplik spots may appear around the time of the rash and last for 2 to 3 days so can easily be missed. They are small white or bluish/white lesions on the buccal mucosa. They can be confused with other lesions in the mouth and so their suspected presence is an unreliable marker of measles
  - the infectious period spans 8 days i.e. cases are infectious from 4 days before rash onset and for 4 full days after
- several other common rash illnesses have similar presentations (especially in young children) e.g. roseola, parvovirus infection and scarlet fever, and so identification on clinical features alone may be unreliable

If you suspect measles call your local  
UKHSA Health Protection Team (HPT)  
to notify and conduct a risk assessment

- if the patient is calling, advise them to seek medical advice from their GP over the phone or NHS 111, if this is appropriate
- if an in-person review is needed, reception staff should be alerted. The patient should be directed to a side room on arrival
- report to local HPT urgently by phone to facilitate prompt risk assessment and public health action for vulnerable contacts (**under 1 year olds, pregnant, immunocompromised**). HPT contact details can be found here [www.gov.uk/health-protection-team](https://www.gov.uk/health-protection-team)
- check for epidemiological factors that increase likelihood of measles:
  - unimmunised status
  - recent exposure to someone with rash/illness
  - recent travel
  - occupation e.g. healthcare worker, nursery worker
- exclude from nursery/educational setting/work until full 4 days after onset of rash

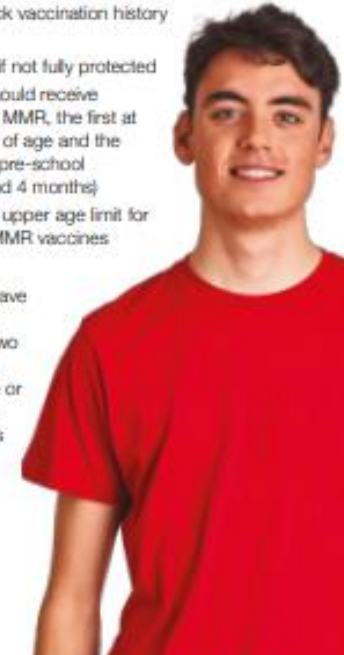
Check all your staff  
are fully vaccinated

## For patients:

- routinely check vaccination history of patients
- offer vaccine if not fully protected
  - children should receive 2 doses of MMR, the first at 12 months of age and the second at pre-school (3 years and 4 months)
  - there is no upper age limit for receiving MMR vaccines

## For staff:

- staff should have documented evidence of two doses of the MMR vaccine or have positive antibody tests for measles and rubella



[Image 1] Conjunctivitis from [www.thu.ac.uk/conditions/conjunctivitis](https://www.thu.ac.uk/conditions/conjunctivitis). [Image 2] Koplik spots from [www.thu.ac.uk/conditions/measles](https://www.thu.ac.uk/conditions/measles). [Image 3] Measles rash on dark skin from [www.thu.ac.uk/conditions/measles](https://www.thu.ac.uk/conditions/measles). [Image 4] Measles rash on dark skin from [www.thu.ac.uk/conditions/measles](https://www.thu.ac.uk/conditions/measles). [Image 5] Measles rash on dark skin from [www.thu.ac.uk/conditions/measles](https://www.thu.ac.uk/conditions/measles). [Image 6] Measles rash on dark skin from [www.thu.ac.uk/conditions/measles](https://www.thu.ac.uk/conditions/measles).

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# **MMR vaccines**

Clare Powell

Specialist Nurse Immunisation - Training lead

# MMR vaccine

There are 2 MMR vaccines currently available for use in the NHS: Priorix and MMRVaxPro.

Both vaccines contain live, modified strains of measles, mumps and rubella viruses therefore they are contraindicated in pregnancy and in immunosuppressed individuals - see full detail [here](#).

MMRVaxPRO contains gelatine of porcine origin as a stabiliser. For more information, see [Vaccines and porcine gelatine \(Bilingual\)](#).

Practices who serve communities who prefer porcine gelatine free products should order Priorix preferentially via Immform.

MMR vaccines do not contain thiomersal or any preservatives.

Vaccine effectiveness of a single dose of MMR vaccine is around 95%. A second dose protects those who do not respond to the first - protection then increases to well above 95%



UK schedule:

Dose 1 at 1 year of age.

Dose 2 at 3 years and 4 months.

Infants from 6 months of age may be offered MMR vaccine (see [Measles Green Book Chapter](#)) as i) post exposure prophylaxis for measles or ii) if they are travelling to a measles endemic area where there is a current outbreak.

Infants in their first year of life may not respond sufficiently to all components of the vaccine so doses given under 12 months of age should be discounted and repeated.

# MMR vaccine effectiveness

- Vaccine effectiveness of a single dose of MMR vaccine is around 95%. A second dose protects those who do not respond to the first - protection then increases to well above 95%
- Primary vaccine failure is rare however it can occur, particularly after a single dose.
- In settings with high levels of close interpersonal contact, such as large households or school settings, controlling measles outbreaks requires a high coverage of 2 doses of MMR vaccine.
- Infants in their first year of life may not respond sufficiently to all components of the vaccine so doses given under 12 months of age should be discounted.
- Individuals with immune deficiencies who have no contraindications for this vaccine may have a sub-optimal response to the vaccine.



# MMR schedule

- A full course consists of 2 doses of MMR vaccine with a minimum interval of 4 weeks between doses.
- As MMR vaccine is a live vaccine, the risk of adverse reactions falls with an increasing number of doses.
- if an individual can't recall whether they have received MMR (or MR or single vaccines) or the exact number of doses they have received, they should receive additional MMR doses up to a total of 2 documented doses with an interval of at least one month between doses.
- A second dose of measles-containing vaccine protects those who do not respond to the first dose and boosts antibody levels in those who did respond. In order to eliminate measles, the WHO recommends 2 doses of a measles-containing vaccine.
- **To maintain good control of measles, a 2 dose MMR schedule is required to offer protection to those who did not respond to the first dose and to prevent accumulation of a pool of susceptible individuals that could otherwise re-establish measles transmission.**

# Timing of dose administration

- The first dose is routinely administered at the age of 12 months (just after the 1<sup>st</sup> birthday).
- A second dose is normally given before school entry (3 years 4 months of age) but can be given routinely from 18 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.
- Doses may be given earlier in certain circumstances – extra doses may then be required (next slide).

# Special circumstances

The first dose of MMR vaccine can be administered from the age of 6 months:

- Where immediate protection against measles is required, for example following exposure to the infection.
- Prior to travel to measles endemic areas with a high incidence of measles or to an area where there is a current outbreak, if the child is likely to be mixing with the local population.

As response to MMR in infants is sub-optimal, where the vaccine has been given before 12 months of age, immunisation with 2 further doses of MMR should be given at the normal ages

The interval between the first and second doses may be reduced to one month when children who have received the first dose of MMR at the routine age require immediate protection against measles or are travelling (as above):

- If the child is under 15 months of age when the second dose is given, then the routine pre-school dose (a third dose) should be given at the usual time (generally 3 years and 4 months of age but in some areas routinely administered from 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.



# Contraindications

- There are very few individuals who cannot receive MMR vaccine.
  - Where there is doubt, expert advice should be sought promptly so that the period the individual is left unvaccinated is minimised.
- MMR vaccines should not be given to those who have had a:
  - Confirmed anaphylactic reaction to a previous dose of the vaccine.
  - Confirmed anaphylactic reaction to any component of the vaccine.
- **MMR is a live vaccine.** Live vaccines can, in some situations, cause severe or fatal infections in immunosuppressed individuals due to extensive replication of the vaccine strain and, for this reason, **should not be given to individuals with some types of severe primary or acquired immunodeficiency.** Vaccination in immunosuppressed individuals should only be conducted in consultation with an appropriate specialist. Refer to [Chapter 6](#) of the Green Book for details.
  - MMR vaccine can be given to HIV-positive individuals who are not immunosuppressed or those with moderate immunosuppression as defined in Table 21.2, [Chapter 21](#) of the Green Book.
- Pregnancy should be avoided for one month following vaccination.

# Co-administration with other vaccines

MMR vaccine can be given at the same time as, or at any interval before or after, other currently used live and inactivated vaccines except yellow fever vaccine and varicella and zoster vaccines: see Green Book, Chapter 11, Table 11.3 [UK immunisation schedule: the green book, chapter 11 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/uk-immunisation-schedule-the-green-book/chapter-11)

Vaccine combinations	Recommendations
Yellow Fever and MMR	A 4 week minimum interval period should be observed between the administration of these 2 vaccines. Yellow Fever and MMR should not be administered on the same day. <sup>1</sup>
Varicella (and zoster) vaccine and MMR	If these vaccines are not administered on the same day, then a 4 week minimum interval should be observed between vaccines. <sup>2</sup>
All currently used live vaccines (BCG, rotavirus, live attenuated influenza vaccine (LAIV), oral typhoid vaccine, yellow fever, varicella, zoster and MMR)	Apart from those combinations listed above, these vaccines can be administered at any time before or after each other.

# Intervals required following tuberculin (Mantoux) skin testing or receipt of blood products

## Mantoux testing:

- MMR vaccination and tuberculin skin testing can be performed on the same day.
- However, if a tuberculin skin test has been initiated, MMR should be delayed until the skin test has been read as the vaccine may cause a temporary depression of tuberculin skin sensitivity leading to a false negative result.
- If protection against measles is urgently required the vaccine can be given.
- If a child has had a recent MMR vaccine and requires a tuberculin skin test, a 4 week interval should be observed.

## Receipt of blood products:

- There is a possibility of vaccine failure if MMR vaccine is given within 3 weeks of blood products such as immunoglobulin. This is due to the presence of passively acquired measles, mumps and rubella antibodies in the immunoglobulin which could prevent the live virus in the vaccine from replicating.
- If urgent protection is required, MMR vaccine can be given but the dose should be repeated after 3 months to ensure long term protection.

# Inadvertent administration of MMR vaccine

- If an immunosuppressed individual receives MMR vaccine, the degree of immunosuppression should be assessed as a potential exposure to measles and managed as per the UKHSA measles post-exposure guidelines.
- The risk assessment should be undertaken in consultation with the clinician caring for the immunosuppressed patient.
- If the clinical assessment is that the patient is not sufficiently immunosuppressed and can tolerate the attenuated vaccine virus, IVIG is not required.
- Pregnant women do not require post-exposure prophylaxis against measles if they are inadvertently given MMR.
- The UK Vaccine in Pregnancy Surveillance programme operated by the UKHSA collected data about exposures to MMR vaccine during pregnancy to monitor the safety of such exposures.
- There are no safety concerns, either for the mother or the baby, when immunised with MMR or single rubella vaccine in pregnancy and they can be immediately reassured.

# Adverse reactions (1)

- Pain, swelling, bruising and redness at the injection site, fever  $>37.5^{\circ}\text{C}$  (oral/axillary) are commonly reported reactions.
- Rash, upper respiratory tract infection and the formation of a small painless nodule at the injection site are also reported.
- These symptoms usually disappear within one to 2 days without treatment.
- The frequency of adverse reactions is similar for first and second doses of vaccine although injection site pain has been found to be very common after the second dose.
- Encephalitis has been reported post vaccination (below 1 per 10 million doses). This is far below the risk from natural disease:
  - Measles 1 in 1,000 to 2,000
  - Mumps 2-4 in 1,000 cases
  - Rubella 1 in 6,000 cases
- All serious suspected reactions following MMR vaccination should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card scheme  
<http://yellowcard.mhra.gov.uk/>.

# Adverse reactions (2)

- Adverse reactions are attributed to effective replication of the vaccine viruses, with subsequent mild illness. Events due to the measles component occur 6 to 11 days after vaccination. Events due to the mumps and rubella components usually occur 2 to 3 weeks after vaccination but may occur up to 6 weeks after vaccination. Individuals with vaccine-associated symptoms are not infectious to others.
- Adverse reactions are less common after a second dose of MMRVAXPRO® vaccine than after the first dose; incidence and severity of adverse reactions following a second dose with Priorix® are broadly similar. Hypersensitivity reactions and anaphylaxis can occur but are very rare. In studies, parotid swelling occurred in about 1% of children of all ages up to 4 years, usually in the third week.
- **Rare and more serious events**
- Febrile seizures are the most commonly reported neurological event following measles immunisation. Seizures occur during the sixth to eleventh day in 1 in 1000 children vaccinated with MMR.
- Arthropathy (arthralgia or arthritis) has also been reported to occur rarely after MMR immunisation, probably due to the rubella component.
- ITP has occurred rarely following MMR vaccination, usually within 6 weeks of the first dose and resolves spontaneously. The risk of developing ITP after MMR vaccine is much less than the risk of developing it after infection with wild measles or rubella virus. Further details on adverse reactions following MMR vaccine can be found in the Green Book [Chapter 21](#), [Chapter 23](#) and [Chapter 28](#). A detailed list of adverse reactions is available in the product's [SPC](#).

# MMR PGD

UKHSA template for local adoption can be accessed via [Patient Group Directions \(PGD\) - Welsh Medicines Advice Service \(wales.nhs.uk\)](https://www.wales.nhs.uk/patient-group-directions)

Major updates to the UKHSA MMR vaccine PGD v5.00 template are:

- Cautions section updated to highlighted phenylalanine content in both Priorix<sup>®</sup> and MMRvaxPro<sup>®</sup>, and National Society for Phenylketonuria (NSPKU) advice.
  - The amount of phenylalanine contained in the vaccines is negligible.
  - Strongly advise individuals with phenylketonuria (PKU) to take up the offer of vaccination.
- Updated adverse effects profile and expected physical appearance upon reconstitution:
  - Priorix<sup>®</sup> forms a clear peach to fuchsia pink solution.
  - MMRvaxPro<sup>®</sup> forms a clear yellow liquid.
- Updated information on co-administration of MMR with varicella and varicella zoster vaccines:
  - Co-administration of MMR with varicella or varicella zoster vaccines on the **same day** should not affect the immune response and therefore repeating the dose is not advised.
  - If not co-administered at the same time as MMR, a 4-week minimum interval should be observed or consideration be given to administering an additional dose of MMR vaccine.
- Other minor rewording of standard text – for details, see PGD.

# **Measles diagnosis, risk assessment infection prevention and control**

Joanne Garner  
Specialty Registrar in Public Health, PHW



# Measles rash



Several other common rash illnesses have similar presentations and can be considered as part of the differential diagnoses eg chickenpox, rubella, roseola, parvovirus infection, hand, foot and mouth disease, scarlet fever.

# Differential Diagnoses



Roseola; pinkish-red spots, patches or bumps, starts on chest, stomach and back, then spreads to face, neck and arms, not usually itchy, may be harder to see on brown or black skin



Scarlet fever; red blotches that turn into fine pink-red rash, feels like sandpaper; looks like sunburn, may be itchy, maybe harder to see on brown or black skin but can feel it



Rubella (German measles); spotty rash starts on face or behind ears, spreads to neck and body, maybe slightly itchy



Parvo virus 19 (Erythema infectiosum, fifth disease); bright red 'slapped cheek' rash- more common in children, then light pink rash may appear on chest, stomach, arms and legs, can be itchy, may be harder to see on brown and black skin



Chicken pox; rash turns into itchy blisters that crust over



Hand, foot and mouth; raised rash, spots on hands and feet, sometimes thighs and bottom, can look pink, red, or darker than surrounding skin, depending on skin tone, can turn into grey lighter blisters, can be painful



# Differential Diagnoses



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# Assessment

In addition to the clinical presentation, it is important to also consider **factors that increase the likelihood of a measles diagnosis**:

- Age: typical clinical presentation in a teenager or adult more likely to be measles.
- Unvaccinated or partially vaccinated.
- Contact with a confirmed or suspected case.
- Recent travel to a measles endemic country or [area](#).
- Measles known to be circulating in local area.
- Member of community with sub-optimal vaccine uptake.
- Attended mass gatherings (e.g. festivals).

UKHSA Think measles poster:

<https://assets.publishing.service.gov.uk/media/653b77e5d10f35000d9a6a6c/UKHSA-12724-think-measles-HCW-poster.pdf>

# Importance for Primary Care

Measles cases are most likely to contact primary care first, therefore staff need to be able to:

- Place patient in appropriate location, and prevent onward transmission.
- Identify suspected cases and notify the Health Protection Team (HPT) promptly.
- Take appropriate action to stop onward transmission without delay and protect vulnerable contacts.

# MMR vaccination

Primary care also provides the setting to:

- Raise awareness about the importance of the Measles Mumps and Rubella (MMR) vaccine.
- Identify unvaccinated children and adults.
- Offer vaccination to prevent spread in the community (or signpost to an appropriate service).

To protect themselves, and prevent transmission of measles in health care settings patient facing:

- Staff should have documented evidence of 2 doses of the MMR vaccine or evidence of prior infection, according to [national guidance](#).
- **Staff who are not fully vaccinated or who are unsure of their immunity, should ensure they have received 2 doses of MMR vaccine.** [WHC/2023/043 \(gov.wales\)](#)

# Prevention in healthcare settings

- Signs should be placed in reception/waiting areas advising patients with any rash illness to report to reception/counter staff.
- Receptionists / counter staff should know that any patients with fever and rash are potentially infectious and should be directed to a telephone triage in the first instance.
- If in-person review is needed:
  - Make sure reception / counter staff are aware to place patient in appropriate location on arrival.
  - And if clinically acceptable, should attend at end of day to minimise risk of transmission.
- If you need to refer a suspected measles case to A&E / hospital inform hospital staff ahead of time, so that the case can be isolated on arrival.

# Risk assessment of cases

Information needed for a risk assessment:

- Vaccination status.
- Recent exposure to someone with rash / illness.
- Recent travel (UK and international).
- Is this person a healthcare worker (HCW)?
- Any contacts who are immunocompromised or vulnerable (aged under 1, pregnant) / HCW?
- Face to face contact of any length or more than 15 minutes in a small, confined area is considered as exposure and will require follow up .

**Report all suspected cases urgently via phone to the Health Protection Team (HPT) on 0300 003 0032**

**Exclude suspected cases from nursery/educational setting/work until 4 days after onset of rash.**



# Public health action for cases

**Report all suspected cases urgently via phone to the Public Health Wales Health Protection Team (HPT) on 0300 003 0032.**

The HPT will:

- Conduct a risk assessment.
- Arrange oral fluid testing: routine or urgent.
- Undertake contact tracing and advise on public health action for immunocompromised or vulnerable contacts (aged under 1, pregnant, unvaccinated).

**Exclude suspected cases from nursery/educational setting/work until 4 days after onset of rash.**

For further information see [National Measles Guidance](#).

# Risk assessment of contacts

If the patient was not isolated and exposed other patients in the waiting room, the HPT will help you with a risk assessment and advise on actions.

Vulnerable contact groups who may require immunoglobulin are:

- Infants.
- Pregnant women.
- Immunosuppressed individuals.

If indicated, HNIG / IVIG should be given as soon as possible, ideally within 72 hours and up to 6 days after exposure.

For further information see: [Measles Post-exposure Prophylaxis guidance](#).

Any **health care worker contact** who is not immune (i.e. does not have evidence of 2 doses of MMR or laboratory confirmation of measles immunity) will require **exclusion** from work from days 5 to 21 after exposure.

# **Infection Prevention and Control**

Beverley Gregory - Consultant Nurse HCAI,  
HARP Team

# Infection prevention and control: key actions (1)

Standard Infection Control Precautions (SICPs) must be used by all healthcare workers at all times and in all settings. Comprehensive guidance and advice, including PPE, is available here [NIPCM - Public Health Wales \(nhs.wales\)](#).

Staff involved in direct patient care (including anyone who has contact with patients e.g. porters, domestics, reception staff) should have documented evidence of 2 doses of the MMR vaccine or have positive antibody tests for measles, in keeping with [national guidance](#).

# Infection prevention and control: key actions (2)

- **Transmission Based Precautions (TBPs)** [Chapter 2 Transmission Based Precautions \(TBPs\) - Public Health Wales \(nhs.wales\) \(TBPs\)](#) must be followed in addition to SICPs when caring for a laboratory-confirmed or suspected case of measles while they are considered to be infectious. More information can be found in [Appendices - Public Health Wales \(nhs.wales\)](#)

Measles is transmitted through the respiratory route (airborne or droplet spread) or by direct contact with the nasal or throat secretions of infected persons. Following suspected/confirmed patient

vacation of the care area, allow sufficient time for clearance of infectious particles  
[nwssp.nhs.wales/ourservices/specialist-estates-services/specialist-estates-services-documents/whtms-library/whtm-03-01-specialised-ventilation-for-healthcare-premises-part-a/](#)  
before cleaning/ decontaminating using either:

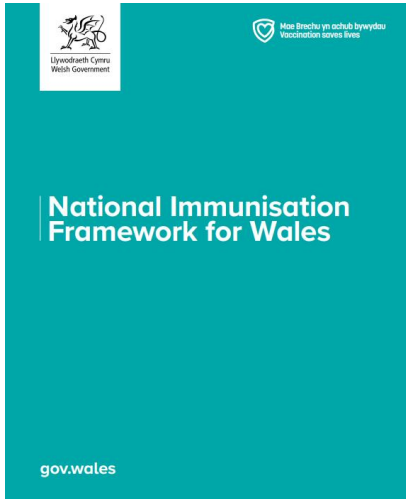
- A combined detergent/disinfectant solution at a dilution of 1,000 parts per million available chlorine (ppm available chlorine (av.cl.)); or
- a general-purpose neutral detergent in warm water followed by a solution of 1,000ppm av.cl).
- A locally approved detergent and disinfectant.

Rooms/areas must be cleaned from highest to lowest points and from least to most contaminated points ensuring local policies are followed at all times.

# **Achieving high immunisation uptake and addressing health inequalities**

Katy Leek- Public Health Nurse  
Public Engagement Team  
VPDP, PHW

# Tackling Inequalities in Vaccination Uptake



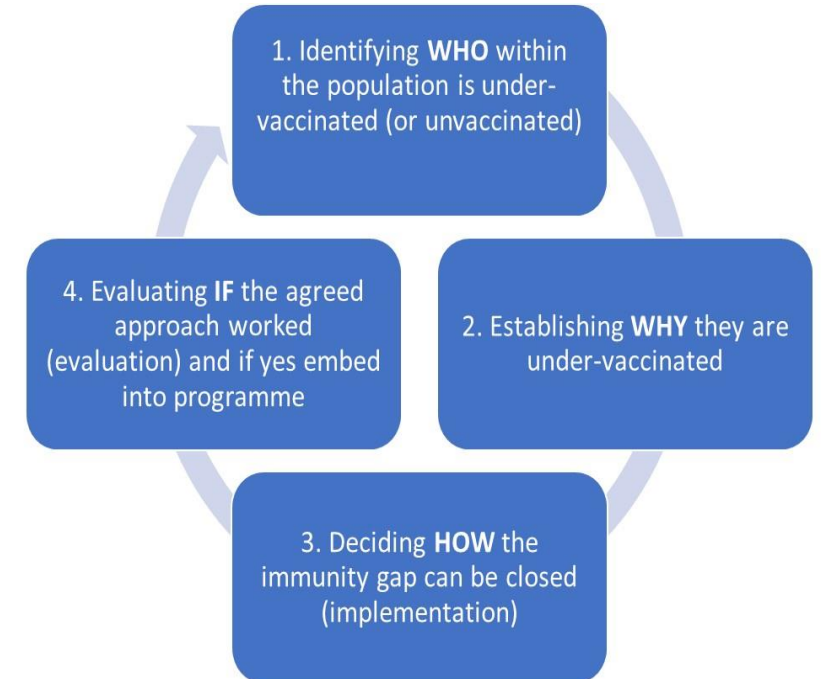
## The National Immunisation Framework for Wales:

- Six areas of focus to ensure design is fit for purpose in the future, equity is at the core of the framework shaping Wales's approach to vaccination.
- Strategic principles to be embedded into Health Boards' Vaccination Equity Strategy.

### Vaccination Equity Strategy Principles checklist

Provision for identifying groups with low vaccination uptake	Provision for determining barriers to uptake	Partnership working and meaningful engagement with community champions, trusted voices and third sector organisations	Co-production of tailored interventions	Evaluation of actions and interventions
✓	✓	✓	✓	✓

## WHO guidance and TIP



# NICE guidance

[NICE guideline 218](#) published 17 May 2022 includes recommendations on:

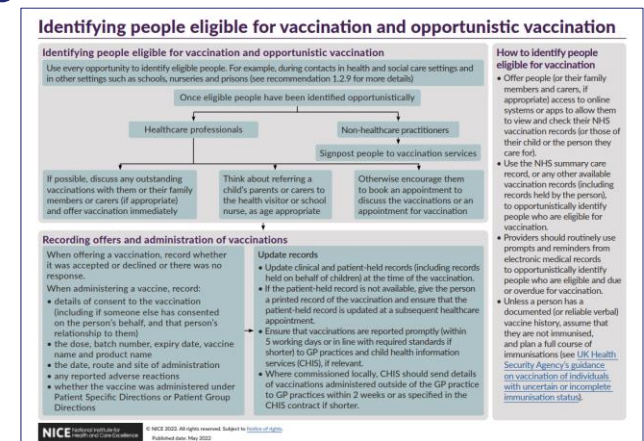
- Service organisation.
- Identifying eligibility, giving vaccinations and recording vaccination status.
- Invitations, reminders and escalation of contact,

and supports the aims of the NHS Long Term Plan, which includes actions to improve immunisation coverage by GPs and support a narrowing of health inequalities.

Supporting tools and resources include:

- Visual summaries on the recommendations (identifying people eligible for vaccination and opportunistic vaccination; invitations, reminders and escalation of contact for different age-groups).
- Quality Standard Vaccine uptake in under 19s (QS145).
- Audit template.

[Immunisation | Topic | NICE](#)





# Insights obtained by VPDP

## Parental Attitudes towards Immunisations of Pre-School Children – BMG 2021

### Information on immunisations



61% of parents said they recalled seeing, hearing or reading something about childhood immunisations in the last 12 months.

Three in four parents (75%) who recall coming across information said these messages were in support of immunisations.



11% of all parents said they had seen, read or heard something that would make them worried about having their child(ren) immunised.



79% of parents said they had all the information they needed to make an informed decision about immunisations.

The main sources of information regarding immunisations used by parents are health visitors/midwives (81%) and the Red book/Personal Child Health Record (75%). Health professionals are used to a greater extent than online sources (85% cf. 64%).

### Views on vaccines



94% of parents agreed that vaccines are effective (strongly agree/agree) and 90% trust vaccines.



92% believe that vaccines are safe, comprising 56% who believe that vaccines are completely safe and 36% who say that there is a very low risk.

### Making a decision and vaccination experiences



90% of parents said they had all of their child(ren)'s immunisations done when they were due while 9% weighed up pros and cons of one or more immunisations before deciding whether or not to have their child(ren) vaccinated.

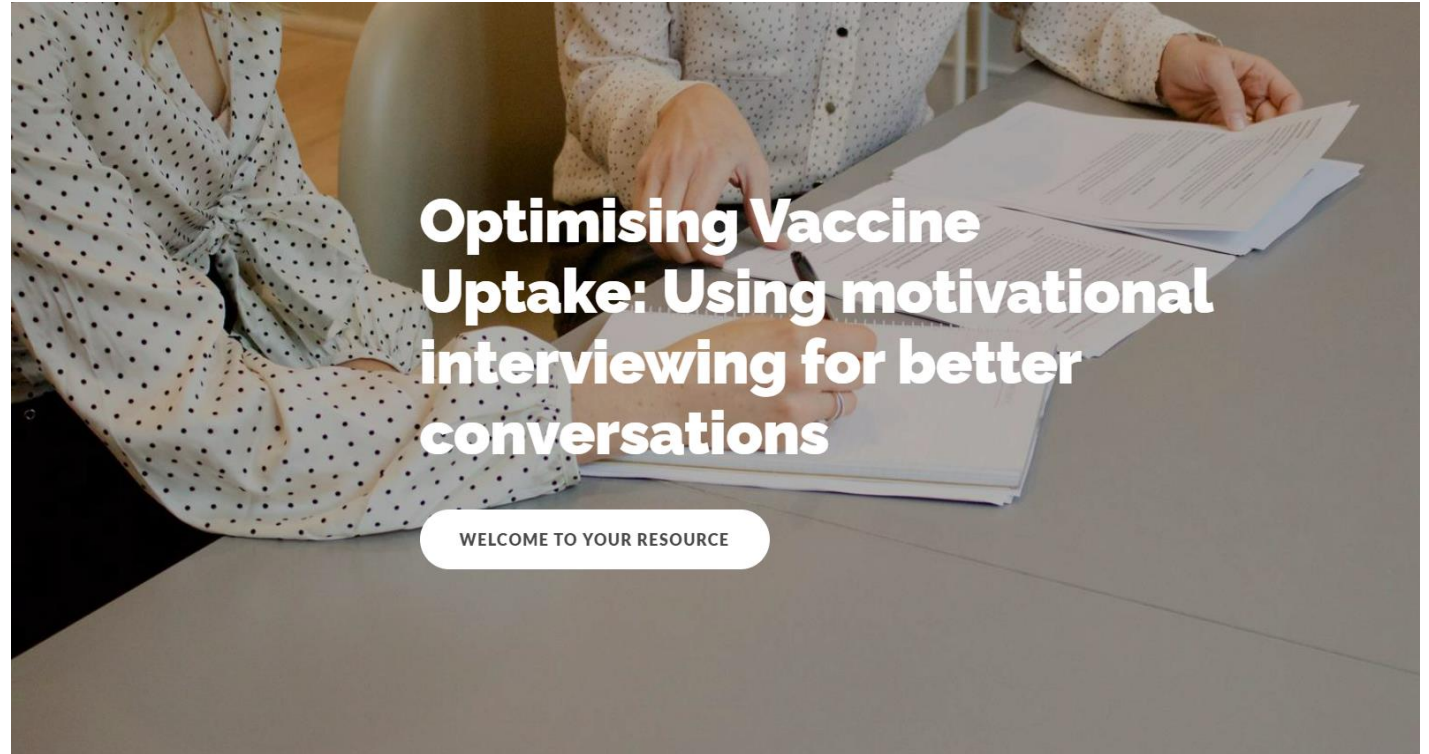


When reflecting on their personal experiences, over nine in ten parents were satisfied with how the vaccination was administered (95%) and the ease of making an appointment (93%). Over four in five were also satisfied with the information provided to them at the visit (85%) and the room facilities (85%).

[Survey of Parental Attitudes towards Immunisation of Pre-School Children \(nhs.wales\)](https://nhs.uk/parental-attitudes-towards-immunisation-of-pre-school-children/)

# E-learning available on optimising vaccine uptake: Using motivational interviewing for better conversations

Incorporating motivational interviewing into your vaccine conversations will enable you to identify the core barriers for an individual, and collaboratively address these in a personalised way.



[Optimising Vaccine Uptake: Using motivational interviewing for better conversations - Overview | Rise 360 \(articulate.com\)](https://articulate.com)

# Communications

Sarah Hartman  
Communications Officer, PHW

# Communications activity to date

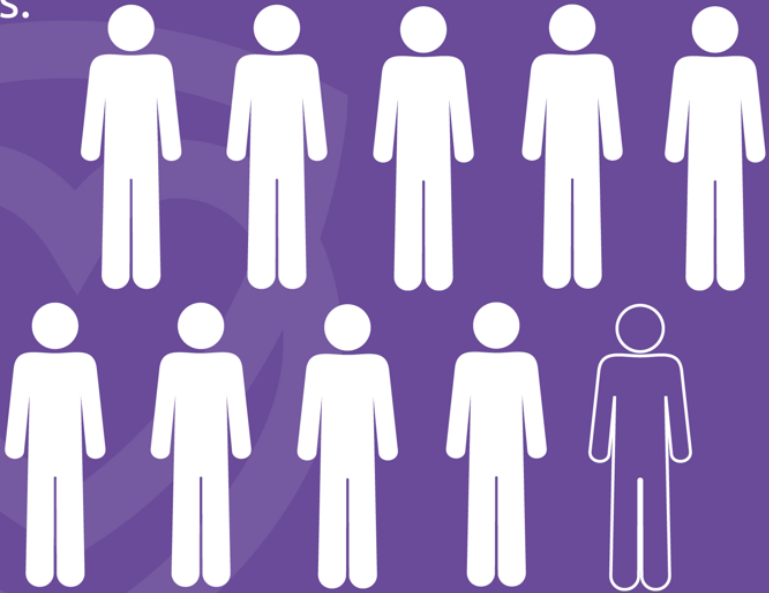
- Higher education student campaign for run September 2024, including university briefings, stakeholder engagement and paid for and organic social media.
- Subsequent social posts in autumn for school age children, targeted at parents and repeated in-line with Cardiff outbreak.
- Support with CMO call to parents to ensure children are vaccinated including media interviews on all main channels.
- Inclusion of call to vaccinate MMR messaging in Whooping cough media activity.
- Update to MMR landing page website.
- English and Welsh video filmed for website and social posts.

# Communications

## MEASLES



Measles can be prevented by **two doses of the MMR vaccine**. It's estimated **one person** with measles can infect **9 in 10** unvaccinated contacts.



**Dr Chris Johnson**  
Head of Public Health Wales'  
Vaccine Preventable Disease Programme

So children will normally  
get offered the MMR vaccine around



Mae'r brechlyn y frech goch fel arfer yn cael ei roi i fabanod sydd yn  
flwydd oed



# Communications

## Time to Talk PHW Oct 23 survey findings

- 82% of participants felt it was very important children and young people are vaccinated.
- Only 35% of people knew that people up to the age of 25 can check their vaccination status with their GP or HB and arrange 'catch up' of missed vaccinations.
- 68% of participants knew all four of the main symptoms of measles.
- 85% of people think more public awareness is needed on the four named vaccines available to protect children and young people from serious illnesses.

# Communications - in progress

- **February:** Organic social posts using edits of new video, social posts also shared with all Health Boards for use.
- **February:** Media Announcement and organic posts of school catch-up MMR programme. Stakeholder work.
- **February / March:** Potential filming of the rollout beginning in schools.
- **March /April / May:** -Paid for advertising/influencer work.
- **April / May:** Update on take up and adapt campaign accordingly. Further stakeholder work.
- **June:** Final reminder for parents to check their child's vaccination status and how they can catch up on their vaccination.
-

# Resources

Juliet Norwood  
Specialist Nurse Immunisation, VPDP, PHW



# Resources

- MMR landing page: [www.phw.nhs.wales/vaccines](http://www.phw.nhs.wales/vaccines) [www.icc.gig.cymru/brechlynnau](http://www.icc.gig.cymru/brechlynnau)
- Public webpage - HBs should be signposting to these short links: [www.phw.nhs.wales/MMRvaccine](http://www.phw.nhs.wales/MMRvaccine) [www.icc.gig.cymru/brechlynMMR](http://www.icc.gig.cymru/brechlynMMR) These pages include FAQs for the public.
- Leaflet: [MMR vaccination. Protecting against measles, mumps and rubella infection](#) Hard copies can be ordered here: [Brechiad MMR Amddiffyn rhag y frech goch, clwy'r pennau a rwbela | MMR vaccination Protecting against measles, mumps and rubella infection \(nhs.wales\)](#).
- Easy Read version of the leaflet – ENG [Vaccination information in accessible formats - Public Health Wales \(nhs.wales\)](#) CYM [Brechu mewn fformatau hygyrch - Iechyd Cyhoeddus Cymru \(gig.cymru\)](#).
- Leaflet: [How to protect you and your baby](#).
- Public FAQs: <https://phw.nhs.wales/topics/immunisation-and-vaccines/>.
- FAQs on MMR for HCP: [Frequently asked questions \(sharepoint.com\)](#).
- Universal MMR poster can be ordered here: [Poster A3 MMR / MMR A3 Poster \(nhs.wales\)](#).





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## Rhaglen Frechu'r Frech Goch ac MMR

Dogfen briffio ar gyfer Penaeithlaid, Staff Ysgolion,  
Lleoliadau Gofal Plant, Colegau a Phrifysgolion

Mae achosion o'r frech goch yn cynyddu ar draws y DU. Mae'n haint anadlol sy'n lledaenu'n hawdd iawn a gall achosi canlyniadau difrifol sy'n newid bywydau i rai.

Mae'r ddogfen briffio hon ar gyfer ysgolion, lleoliadau gofal plant, prifysgol a cholegau ar y frech goch a'r brechiad MMR (y frech goch, cleb a'r pennaau a nebela) yng Nghymru. Sicrhewch fod gan yr holl fynediad at y wybodaeth hon.

### Ffeithiau am y frech goch

- 1 Mae'n frech goch yn salwch heintus iawn. Mae'n heintus cyn i'r symptomau ddechrau.
- 2 Am bob 100 o bobl nad ydynt wedi'u brechu yn erbyn y frech goch, bydd tua 90 yn dal y frech goch os byddant yn dod i gysylltiad â heintus y frech goch.
- 3 Gall achosi salwch difrifol gan gynnwys heintiau ar y frest, twaledau (ffisul), chwyddo'r ymennydd, a niwed i'r ymennydd. Gall cymhlethdadau difrifol hyd yn oed ddigwydd ffyneddodd lawer ar ôl yr haint.
- 4 Gall y frech goch ladd.
- 5 Nid eidd gwellat'r frech goch.
- 6 Mae plant, pobl ifanc ac aelodau o staff yn ymrebu risg o haint y frech goch os nad ydynt wedi cael 2 ddos o'r brechiad MMR neu haint naturiol wedi'i ddoglennu.

### Cymhwysterau ar gyfer brechiad MMR

Mae dau ddos o'r brechiad MMR yn cael eu cynnig **am ddim i'r holl blant** cyn iddynt ddechrau yn yr ysgol pan fyddant yn:

- + 12-13 mis, a
- + 3 oed a 4 mis.

Gall plant ac aelodau sy'n colli unrhyw rai o'r dosau bartau i'w derbyn gan eu meddyg/a'r unrhyw adag ar ôl y dyddiad dyledus, ac mae angen mis rhwng y ddau ddos.

Ni ddylid rhoi'r brechiad MMR i bobl sydd â system imiwneidd is na sy'n ffeithiog. Mae tyn hyd yn oed yn fwy o newm i siarhau bod pawb sy'n gynnwys wedi cael y ddau ddos MMR i amddiffyn y rhai na allent gael y brechiad MMR.

Os nad ydych yn siŵr a ydych wedi cael y ddau ddos, mae'n fwy diogel cael gormod o ddosau o'r brechiad na dim digon.

Mae rhagor o wybodaeth am y brechiad MMR a chymhwysterau ar gael yn [icg.gig.cymru/brechlynMMR](http://icg.gig.cymru/brechlynMMR)



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Vaccination saves lives

## Measles and MMR Vaccination Programme

Briefing document for Head Teachers, School  
Staff, Childcare Settings, Colleges and Universities

Cases of measles are rising across the UK. It is a respiratory infection that spreads very easily and can cause serious life changing consequences for some.

This briefing document is for schools, childcare settings, universities and colleges on measles and the MMR (measles, mumps and rubella) vaccination in Wales. Please ensure that all staff have access to this information.

### Measles facts

- 1 Measles is a highly infectious illness. It is contagious before symptoms start.
- 2 For every 100 people not vaccinated against measles, about 90 will catch measles if exposed to the measles virus.
- 3 It can cause serious illness including chest infections, seizures (fits), swelling of the brain, and brain damage. Serious complications can even occur many years after infection.
- 4 Measles can kill.
- 5 There is no cure for measles.
- 6 Children, young people and staff members are at risk of measles infection if they haven't had 2 doses of the MMR vaccination or documented natural infection.

### Eligibility for MMR vaccination

Two doses of the MMR vaccine are offered **free** to **all children** before they start school at:

- 12-13 months, and
- 3 years and 4 months.

Children and adults who miss any of the doses can still receive them from their GP surgery at any time after they were due, with a month needed between the two doses.

The MMR vaccine should not be given to people who have a lowered immune system or who are pregnant. This is even more reason to ensure that everyone who is eligible has received both MMR doses, to protect those who cannot have the MMR vaccine.

If you are not sure if you have had both doses, it is safer to have too many doses of the vaccine than not enough.

More information about the MMR vaccine and eligibility is available at [phw.nhs.wales/MMRvaccine](http://phw.nhs.wales/MMRvaccine)





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Vaccination saves lives

## Y Frech Goch: Cadw'n ddiogel Measles: Stay safe

Mae'r frech goch yn heintus iawn a gall fod yn ddifrifol iawn. Mae'n lledoenu'n hawdd ymysg pobl nad ydyn nhw wedi cael eu brechu. Gall achosi salwch difrifol, fel lliid yr ymennydd. Gall pobl, gan gynnwys plant, farw o'r frech goch.

- Yr amddiffyniad gorau yn erbyn y frech goch yw **2 ddos** o'r brechiad MMR diogel - yn 1 oed a 3 oed 4 mis.
- Os nad ydych chi neu'ch plentyn wedi cael 2 ddos o'r brechiad MMR gallwch eu cael **am ddim** gan eich meddygla.
- Os nad ydych chi'n gwybod a ydych chi neu'ch plentyn wedi cael y brechiadau **am ddim**, gofynnwch i'ch meddygla. Dydy hi ddim yn rhy hysgus.
- Os oes gennych chi neu'ch plentyn symptomau'r frech goch **arhoswch gartref** a ffoniwch eich meddygla neu ffoniwch GIG 111 Cymru. **Ffoniwch 111.** Mae ffonio'r rhif hwn yn rhad ac am ddim. **Cadwch draw** o'ch meddygla a'r adran darwainiau ac achosion brys - gallech lledoenu'r salwch i bobl eraill.

Mae rhagor o wybodaeth ar gael ar wefan lechyd Cyhoeddus Cymru:  
[icc.gig.cymru/brechlynMMR](http://icc.gig.cymru/brechlynMMR)

### Symptomau | Symptoms



Ar wefan lechyd NHS Wales Cymru  
Cyhoeddus Cymru  
Cyhoeddus Cymru  
Cyhoeddus Cymru  
Cyhoeddus Cymru



Ar wefan lechyd NHS Wales Cymru  
Cyhoeddus Cymru  
Cyhoeddus Cymru  
Cyhoeddus Cymru  
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### Symptomau | Symptoms



Ar wefan lechyd NHS Wales Cymru  
Cyhoeddus Cymru  
Cyhoeddus Cymru  
Cyhoeddus Cymru  
Cyhoeddus Cymru



Ar wefan lechyd NHS Wales Cymru  
Cyhoeddus Cymru  
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Cyhoeddus Cymru  
Cyhoeddus Cymru



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Cymru  
Public Health  
Wales

# Resources

1. UKHSA National Measles guidance (including post-exposure prophylaxis): <https://www.gov.uk/government/publications/national-measles-guidelines>.
2. Viral Rash in pregnancy guidance: <https://www.gov.uk/government/publications/viral-rash-in-pregnancy>.
3. Measles Green Book Chapter: <https://www.gov.uk/government/publications/measles-the-green-book-chapter-21>.
4. NICE Clinical Knowledge Summary – Management of measles: <https://cks.nice.org.uk/topics/measles/management/management/#admission-referral>.
5. NHS Infection Prevention and Control Manual: <https://www.england.nhs.uk/publication/national-infection-prevention-and-control/>.
6. Immunisation of healthcare and laboratory staff: the green book, chapter 12: <https://www.gov.uk/government/publications/immunisation-of-healthcare-and-laboratory-staff-the-green-book-chapter-12>.
7. Health and Social Care Act 2008: code of practice on the prevention and control of infections: <https://www.gov.uk/government/publications/the-health-and-social-care-act-2008-code-of-practice-on-the-prevention-and-control-of-infections-and-related-guidance>.
8. [How to stay safe during a measles outbreak - GOV.UK \(www.gov.uk\)](#)
9. [Information on measles for health professionals - GOV.UK \(www.gov.uk\)](#)
10. [Measles: information for schools and healthcare centres - GOV.UK \(www.gov.uk\)](#)
11. [MMR Vaccine \(Measles, Mumps and Rubella Vaccine\) | Vaccine Knowledge Project \(ox.ac.uk\)](#) (external).

# Key messages

- Measles is highly infectious; one case of measles can infect 9 out of 10 of unvaccinated close contacts.
- there can also be a temporary reduction in the immune response for a few weeks following measles infection. This can increase the risk of severe secondary bacterial and viral infections.
- Complications are more common and more severe in young infants, adults, immunosuppressed individuals and during pregnancy\*.
- Unvaccinated women of childbearing age should be offered vaccine before becoming pregnant. Following vaccination, pregnancy should be avoided for one month.
- 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
- MMR vaccine can be given to individuals of any age and should be offered opportunistically and promoted to unvaccinated or partially vaccinated younger adults – particularly those born between 1970 and 1990.  
<https://www.gov.uk/government/publications/measles-the-green-book-chapter-21>
- Individuals born before 1970 are likely to have had natural infection with measles, mumps and rubella and are unlikely to be susceptible. However, MMR vaccine should be offered to such individuals on request or if they are considered to be at high risk of exposure.
- **Make Every Contact Count (MECC)** - check immunisation history of every patient, especially for children, new GP registrations including young people joining a practice when they move for college or university, those entering prison or military service, traveller communities, new migrants, refugees and asylum seekers. All travellers to endemic/ epidemic areas should be fully immunised according to the UK schedule.

# **Q&A section**

# MMR FAQs

## How quickly does MMR vaccine provide protection?

Protection against disease following MMR vaccination is achieved after around a week to 10 days for measles and rubella and around three weeks for mumps. Vaccine-induced measles antibody develops more rapidly than that following natural infection, which allows MMR to be used for post-exposure prophylaxis against measles. From the time immunisation is given, the level of protection against disease following exposure to an infectious person gradually increases, due to the time taken to incubate infection, so the vaccine can have some effect in preventing or attenuating disease from the day of immunisation onwards [MMR for all: general guide - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/mmr-for-all-general-guide).

# MMR FAQs

## Is there advice on measles, mumps or rubella outbreaks?

In Wales, the Health Protection Team provide advice and support on community disease control issues in Wales. The Health Protection Team should be contacted with any details of any cases of infectious disease or to report any incidents or outbreaks, Tel. 0300 00 300 32. The team contributes to the all-Wales Acute Response Service.

Email: [AWARE@wales.nhs.uk](mailto:AWARE@wales.nhs.uk)

For UKHSA Guidance of Preventing and controlling infections see: [Preventing and controlling infections – GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/preventing-and-controlling-infections).

For UKHSA Guidance on managing outbreaks and incidents see: [Managing outbreaks and incidents - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/managing-outbreaks-and-incidents).

Information about measles, mumps and rubella surveillance and epidemiology is available at: [Immunisation surveillance - Public Health Wales \(nhs.wales\)](https://www.nhs.uk/public-health/wales/surveillance/immunisation-surveillance).

[Frequently asked questions \(sharepoint.com\)](#)